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A CENSUS OF THE INDIAN POLYGONUMS.

BY

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INTRODUCTION.

This paper is an expansion of notes made by the writer during an examination of the Indian Polygonums in the Calcutta Herbarium, undertaken at the request of Major Prain, Superintendent of the Royal Botanic Garden, Calcutta. The notes were originally put together under the idea of their being likely to be of use to workers in the Calcutta Herbarium. It has been thought, however, that they might prove of service to botanists in India generally, who may not have an opportunity of personally consulting the Calcutta Herbarium, and accordingly it has been decided to give them a wider publicity than a pigeon-hole in the Calcutta Herbarium Polygonum cabinet affords. The limits of the channel of publication have restricted the scope of the paper to little beyond a mere list of the species, with their localities, but so far as it goes, the paper gives as complete a distributional survey of the genus in India as the material in the Calcutta Herbarium permits.

The paper consists of three parts:—1st, a list of Indian species, inclusive of all those described in the Flora of British India, whether they are represented in the Calcutta Herbarium or not, with their localities and altitudes, whenever given; 2nd, an artificial key to all the species and the more important varieties mentioned in the list; 3rd, a few notes on the distribution of the Indian species.

In the first part, localities, altitudes and ticket numbers have been quoted as fully as possible and for several reasons. Firstly, that those who may possess any unnamed or, at least according to this list, misidentified duplicates of the sheets quoted, may, if they choose, name or correct according to this list. Secondly, that if any worker finds occasion to differ from the writer as to the naming of any particular sheet or sheets, he or she may, with better opportunities than the writer—who, it is to be recollected, has had under study only the Calcutta Herbarium sheets and at the last moment a rapid survey of the Shaharanpur Herbarium sheets, consider and dispose of the question. Thirdly, that irrespective of names altogether, there may be as little doubt as possible, where there is access to a representative Herbarium, as to what are the plants to which the writer refers. Lastly, to make it possible to plot out, on blank maps of India, the distribution of any species with as great precision as the information supplied by collectors has made possible.

It is to be regretted that this information is not always by any means so complete as it might be. A fair percentage of the Calcutta sheets have not been quoted either because the tickets bear nothing beyond such

expression as "N W. Him." or "Assam" or "Punjab", or "S. India", which for the purpose of a precise survey are much too vague, or because they give only the name of the hamlet near which the specimen had been picked up. This latter practice of collectors is, in the eyes of the compiler of a paper like the present, just as reprehensible as the former, as it leads to much needless expenditure of time—to mention nothing else—in attempting to identify such insufficiently indicated localities by consulting a multitude of maps, gazetteers, books of travel, etc., each of which probably has its own particular system of mis-spelling Indian place-names. Sheets bearing such expressions as "N. W Himalaya", "Assam", are quoted only where they are the sole representatives of the species in the Calcutta Herbarium, or where properly localised specimens are very few.

The artificial key does not pretend to the unerring accuracy of an automatic machine, neatly naming and ejecting every Polygonum in whatever condition thrown into it, but it is hoped that it may aid the botanist unfamiliar with the Indian species to approximately place his specimens, so that he can compare them with the descriptions in the Flora of British India, with as little waste of time as possible. The tables of distribution explain themselves, and any additional notes merely have the merit, if it be such, of saving the reader a little mental and visual exercise.

The botanical area considered is practically the same as that dealt with in the Flora of British India. Ceylon, however, is here omitted, partly because that island has now a "Flora" of its own, partly because the Calcutta Herbarium has little beyond Thwaites' distribution numbers. The British Indian Empire, with Nepal, Sikkim, a small part of Tibet, Bhutan, the hills just to the east of Bhutan, and the Malay Peninsula, is taken as the unit. This being itself botanically a sub-area, is divided into sub-sub-areas, and these again into districts, as detailed below.

The sub-sub-areas are, in the main, similar to those adopted by Mr. C. B. Clarke in his paper on the sub-sub-areas of British India in the *Journal of the Linnean Society*, vol. xxxiv, but the writer's sub-sub-areas agree more with the political boundaries, which are more convenient for practical purposes, and probably will not be found to stand much in the way of drawing any phytogeographical inferences from the facts set forth. In the list of species, the distribution of each one is given in the order of the sub-sub-areas detailed below and within each sub-sub-area, where such sub-sub-areas are further sub-divided into districts, in the order of the districts. Each sub-sub-area, and within it each district, has its own number; but in every case the name as well as the number of the sub-sub-area or district is

Hills. (6) *North and South Shan and Karen Hills.* (7) *Pegu ; Yomah.* (8) *Chindwin Valley.* (9) *Arracan.* (10) *Irrawaddy Valley.* (11) *Sittang Valley.* (12) *Tenasserim.*

XI.—MALAY PENINSULA and ANDAMANS.

Districts.—(1) *The Peninsula.* (2) *The Andamans and Nicobars.*

PART I.—LIST OF SPECIES.

The genus *Polygonum* has not escaped the numerical increase resulting from the extension of area of British India and the influx of new collections, which have occurred since the publication of vol. v. of the *Flora of British India* in 1890. Nine species have been added to the number given in the *Flora of British India*: of these, only two are new discoveries since the publication of vol. v; of the remainder, some had been overlooked when the account in that volume was written, while the advance of the Indian frontiers, particularly on the west, has rendered necessary the inclusion of others. Descriptions of those additional species have been given, so as to obviate the necessity of consulting various books which quite likely might not be readily accessible to the botanist in India. Species, varieties, and localities new or not mentioned in the *Flora of British India* are distinguished by an asterisk.

SECTION I.—KÆNIGIA Hook. f.

1. *Polygonum islandicum* Hook. f.

VI.—NORTH-WEST HIMALAYA: (2) Baltistan; Dessai, 13,000 ft., *C. B. Clarke*, No. 29813 B! Karpuchu Valley, 13-14,000 ft., *Duthie*, No. 11975! (5) Ladakh; Indus Valley, 12-14,000 ft., *Stoliczka*! (6) Zanskar; North-West from Padam, 12,000 ft., *Stoliczka*! (7) Rupchu; Indus Valley, 12-14,000 ft., *Stoliczka*! (8) Spiti and Parang; Nako, 14-16,000 ft., *Thomson*!

SECTION II.—ELEUTHEROSPERMA Hook. f.

2. *Polygonum delicatulum* Meisn.

VI.—NORTH-WEST HIMALAYA: (12) Kashmir; Musjid Valley, 12-13,000 ft., *Duthie*, No. 13222! (19) Kangra; Laka, *Edgeworth*! (21) Garhwal, Rhudughera-ka Godh, *Duthie*, No. 206! Taulea under Srikanta, 12-13,000 ft.,

Duthie, No. 540! (22) Kumaon; Milam and Ralum, 12,000 ft. *Strachey & Winterbottom*, No. 38!

- VIII.—EASTERN HIMALAYA: (1) Sikkim; Tongloo, 10,000 ft., *King*, No. 4965! Phalut, 11,000 ft., *Thomson*! Sandakphu, 12,000 ft., *Gamble*, Nos. 766 and 8402! Phullalong, 11,000 ft., *C. B. Clarke*, No. 13403! Islumbo, 12,000 ft., *C. B. Clarke*, No. 25563! Jongri, 13-15,000 ft., *T. Anderson*, No. 594! Bloktan, near Jongri, *King's collector*! Niapokri, 12,000 ft., *King's collector*! Momay Samdong, 17,000 ft., *Gammie*, No. 696! Tankra, 15,500 ft., *Gammie*, No. 582! Yakla Pass, 16,000 ft., *C. B. Clarke*, No. 10192! (2) Tibet and Bhutan; Patang-la, 10,000 ft., *King's collector*, No. 4163! Ze-lep-la, *King's collector*! Gup-ten-de-la, a little above Chumbi, *King's collector*!

3. *Polygonum filicaule* Wall.

- VI.—NORTH-WEST HIMALAYA: (11) Hazara; Kagan Valley, 14,400 ft., *Duthie*, No. $\frac{20113}{b}$! (12) Kashmir: Sind Valley, 12,000 ft., *C. B. Clarke*, No. 30998! Yamham Pass, 13-14,000 ft., *Duthie*, No. 14184! (19) Kangra; Laka, *Edgeworth*! (22) Kumaon; Ralum, 12-14,000 ft., *Strachey & Winterbottom*, No. 37!

- VII.—NEPAL: Gossainthan, *Wallich*, Nos. 1694 and 1725! Chiami, 12,000 ft., *King's collector*!

- VIII.—EASTERN HIMALAYA: (1) Sikkim; Tongloo, 10,000 ft., *King*! *Gamble*, No. 2697 B! Phullalong, 11,000 ft., *C. B. Clarke*, Nos. 13416 C and E, and 25696 D! Chandogiri, 11,000 ft., *Gamble*, Nos. 82 B and 773! Singalelah, 10,000 ft., *Gammie*, No. 66! Roskah, 10-11,000 ft.; Jongri, 15,000 ft.; Bloktan, Chokka, and Chooabama, near Jongri, *King's Collector*! Momay Samdong, 15,500 ft., *Gammie*! Lachung Valley, 12,500 ft., *Gammie*, No. 945! Tankra, 10,000 ft., *Gammie* No. 428! (2) Tibet and Bhutan; Chumbi, *Dunghoo*! Nathoot, east of the Chumbi Valley, Sikkim side, *King's* No. 4294! Ga-ling, between Chumbi and Phari, *Dunghoo*!

VAR. *cæspitosa*.

- VIII.—EASTERN HIMALAYA: (1) Sikkim; Taktoh, 10,000 ft., *King's collector*!

This is a very dwarf form, very small in all its proportions, and not more than two inches high. It is not necessarily a more alpine form as the locality quoted above is at the lowest level for the species.

***VAR. villosa.**

VII.—NEPAL: Huanangi, 10,000 ft., *King's collector*!

VIII.—EASTERN HIMALAYA: (1) Sikkim; Gnatong, 12,000 ft.,
Dungboo! Gnatut, 15,000 ft., *King's collector*!

This is a very distinct variety, named by Major Cummins, and easily distinguished by its very hirsute stem and leaves.

Polygonum delicatulum and *Polygonum filicaule* evidently grow not infrequently in close intimacy, as on several sheets in the Calcutta Herbarium, the two are inextricably mixed up, as if gathered in the same tuft.

SECTION III.—AVICULARIA Meisn.

4. ***Polygonum blaristatum** Aitch. & Hemsley, *Four. Linn. Soc*, vol. xviii, p. 90.

A small prostrate glabrous shrub with twisted, often very short branches. *Leaves* small, crowded, subcoriaceous, elliptic or obovate, 4-8 mm. long, often abruptly and shortly acuminate, sessile or very shortly petioled. *Stipules* large, bifid, with two long excurrent nerves. *Flowers* axillary, solitary or in pairs, sessile or shortly pedicelled, 2-4 mm. in diameter. *Perianth* red, 5-partite, segments alike and rather fleshy or with the two inner segments thinner. *Stamens* 8, filaments dilated at the base. *Ovary* glabrous, styles terete. *Nut* triquetrous.

I.—NORTH-WEST FRONTIER: (1) Afghan border; Seratigah, Kurram Valley, 12,000 ft., *Aitchison*, No. 816!

This description is adapted from that in the *Journal of the Linnean Society* quoted above.

5. **Polygonum recumbens** Royle.

VI.—NORTH-WEST HIMALAYA: (12) Kashmir; Basaoli, 4,500 ft., *C. B. Clarke*, No. 31542 B! (15) Kunawar-Bashahr; Wangtu Valley, below Grammon, *Brandis*, No. 3547! Pasada, 6,000 ft., *Lace*, No. 1082! (19) Kulu; Dharmasala, 7,000 ft., *C. B. Clarke*, No. 24003 B! (20) Simla; *Griffith*! Elysium Hill, 7,000 ft., *Gamble*, No. 4715 C! (21) Garhwal; Deohan Range, 7-8,000 ft., *Duthie*, No. 1222! Landour, 7,500 ft., *Vicary*! Mussoorie, 7,000 ft., *King*! *Duthie*, No. 746! (22) Kumaon; *Anderson*! Girgaon, 6,000 ft., *Strachey & Winterbottom*, No. 41!

6. **Polygonum cognatum** Meisn.

VI.—NORTH-WEST HIMALAYA: (4) Dras; Dias and north of the Zozi-la, *Stoliczka*! Dras Valley, 11-12,000 ft., *Duthie*,

No. 11656! (6) Zanskar; East of the Pensi-la, and west of Padam, 12,000 ft., *Stoliczka*! (9) Chitral; Lowari Pass, 10,000 ft., *Harriss*, Duthie's No. 16593!

7. *Polygonum paronychioides* C. A. Mey.

I.—NORTH-WEST FRONTIER: (1) Afghanistan; 3,500 ft., *Aitchison*, No. 561! Kohat to Kurram, *Bellew*, No. 160! Waziristan; Barwand, 4,000 ft., *Harusukh*, Duthie's No. 15634!

VI.—NORTH-WEST HIMALAYA: (1) Gilgit, 9,000 ft., *Giles* No. 11! (2) Baltistan; Chatpani Nala, 10-11,000 ft., *Duthie*, No. 13823! (4) Dras; Thatayan, 11,000 ft., *Gammie*! (6) Zanskar; 20 miles north-west of Padam, 12,000 ft., *Stoliczka*! (7) Rupchu; south of the Tok-ling-la, 13,500-15,000 ft., *Stoliczka*! (8) Spiti and Parang; ascent to Kibar, 13,000 ft., *T. Thomson*! (9) Chitral and Dir; Ziarat, 7-8,000 ft., *Duthie's* No. 16587! (11) Hazara; Kagan Valley, 9,000 ft., *Inayat*, Duthie's No. 20126! (12) Kashmir; valley of the Kishengunga, *Strachey & Winterbottom*, No. 594! (15) Kunawar; Pangi, *Stoliczka*! Kuri and Changrezing, 11-12,000 ft., *Stoliczka*! (18) Chamba; Triloknath to Jurma, 9,000 ft., *Lace*, No. 1682!

8. *Polygonum salicornioides* Jaub. & Spach.

I.—NORTH-WEST FRONTIER: (3) Scinde; ex *Flora of British India*.

There are no specimens of this species in the Calcutta Herbarium.

9. *Polygonum aviculare* Linn.

I.—NORTH-WEST FRONTIER: (1) Afghan border; Kurram Valley, *Aitchison*, Nos. 632 and 655! Kohat to Tonk, *Bellew*, No. 578 B! Peshawar; *Stewart*! (2) British Baluchistan; Quetta, 6 000 ft., *Duthie*, No. 8704! Fort Sandeman, 4,600 ft., *Harusukh*, Duthie's No. 19001!

VI.—NORTH-WEST HIMALAYA: (5) Ladakh; Indus Valley, Upshi to Leh, 12-14,000 ft., *Stoliczka*! (9) Chitral and Dir, near Drosh, 4-5,000 ft., *Hamilton*, Duthie's No. 17917! (11) Hazara; *Stewart*! Kagan Valley, *Inayat*, Duthie's No. 20120! (12) Kashmir; near Kashmir City, *Strachey & Winterbottom*, No. 274! Kamri Valley, 10-11,000 ft., *Duthie*, No. 12539! Baragam, 9,000 ft., *Duthie*,

No. 13963! (13) Kistawar and Badrawar; Badrawar, 4-10,000 ft., *Stoliczka*! (15) Kunawar; Chini, *Brandis*, No. 2749! Pangi, *Brandis*, No. 4001! (18) Chamba; Nurpur, 4,000-5,500 ft., *Schlagintweit*! (20) Simla, 7,000 ft., *Schlich*! (22) Kumaon; Near Milum, 11,500 ft., *Strachey & Winterbottom*, No. 21! Dhauli Valley, *Duthie*!

10. *Polygonum Bellardi All. (*Fl. Pedem. ii*, 205, t. 90, f. 2).

Annual, glabrous; stem erect, 20 to 45 cm. long, branches slender grooved, nodes distant. *Leaves* sessile, elliptic, lanceolate, acute, 2 to 3.8 cm. long, .4 to .7 cm. broad, flat, midrib distinct, lateral nerves obscure or none. *Stipules* membranous, hyaline, lacerate in their upper half, with a few prominent nerves. *Flowers* on short pedicels as long as the perianth, in clusters of 2 to 3 in the axils of tubular hyaline few-nerved slightly lacerate bracts, distant on a long slender raceme. *Nutlet* trigonous, included, finely punctate or shining.

I.—NORTH-WEST FRONTIER: (1) Afghan border; Kurram district, *Aitchison*, No. 656! (2) British Baluchistan; Rakh Darkhel, Peshin Valley, 4,800 ft., *Lace*, No. 3317.

VI —NORTH-WEST HIMALAYA: (9) Chitral and Dir; Dir, 6,000 ft., *Harriss*, *Duthie's* No. 16584! (11) Hazara, 3,500 ft., *Stewart*, No. 443!

11. Polygonum setosum Jacq. (*Obs. iii*, 8, t. 57).

Shrubby, glabrous, 15 to 30 cm. high, more or less tufted. *Root-stock* woody, as thick as the little finger with bases of old shoots; branches 15 to 30 cm., erect or ascending, flexuous or geniculate, terete below, triquetrous above, grooved; internodes elongate, lower shorter than the leaves, upper longer than the leaves, shortened again in the inflorescence. *Leaves* very shortly petioled, distinctly articulated with the pulvillus; lamina linear-lanceolate or subulate, 2 to 4.5 cm. long, .4 to .8 cm. broad, mucronate, margin revolute, midrib distinct with many parallel veins running obliquely forward from the midrib to merge in the margin. *Stipules* membranous, sub-hyaline, lacerate, setose at the mouth, with many nerves, at first tubular, then longitudinally split anteriorly. *Flowers* on short pedicels, articulated below the perianth, in clusters of 2 to 3 in the axils of infundibuliform slightly lacerate bracts on at first somewhat dense but latterly interrupted terminal racemes. *Perianth*-tube short, segments in two series, 2 outer and 3 inner, sub-equal. *Stamens* 8, inserted on the throat, 3 large and 5 small. *Nut* trigonous, polished.

I.—NORTH-WEST FRONTIER: (1) Afghan border; Kurram Valley, *Aitchison*, No. 656!

VI.—NORTH-WEST HIMALAYA: (15) Kunawar; Pangi, *Stoliczka*!

The many-nerved stipules, and the peculiar venation of the leaves with their revolute margins, make this species quite distinct. The Calcutta sheets are intermediate in character between *Polygonum setosum* Jacq., and *Polygonum luxuloides* Jaub & Spach, as described in Boissier's *Flora Orientalis*, vol. iv, pp. 1038-1039, and as figured in Jaubert and Spach's *Ill Or.*, *tt* 125 and 126. Boissier describes *Polygonum luxuloides* as very close to *Polygonum setosum*, and the Calcutta sheets would support the idea that they are really one species.

12. *Polygonum tubulosum* Boiss

I.—NORTH-WEST FRONTIER: No specimens in the Calcutta Herbarium.

VI.—NORTH-WEST HIMALAYA: (4) Dras, 10,000 ft., *Duthie*, No. 13733! (6) Zaskar, 5-8,000 ft., *T. Thomson*! Near Rangdam Goupa, 12-14,000 ft., *Stoliczka*! (9) Chitral and Dir; Mirga 7,200 ft., *Gatacre*, *Duthie's* No. 17512! (11) Hazara, 3,500-5,000 ft., *Stewart*, No. 326! (12) Kashmir; Kishengunga Valley, below Gurais, 8-9,000 ft., *Duthie*, No. 14101! (14) Lahul; *Brandis*, No. 3545! (21) Garhwal; Ganges Valley above Jangla, 9-10,000 ft., *Duthie*, No. 530.

13.* *Polygonum polycnemoides* Jaub. & Spach. (*Illustr. ii*, 20 t. 120).

Annual, glabrous, prostrate, much branched; branches 7 cm. to rarely 30 cm. long, filiform, flexuous, angled but not grooved, often finely scaberulous on the angles; internodes short, 8 mm. to 16 mm. long, very uniform, but becoming very short towards the apex and entirely covered by the stipules. *Leaves* minute, sessile, alternate, fleshy, flat, entire, obsoletely 1-nerved, mucronulate, 8 mm. long or less. *Stipules* delicate, membranous, white, hyaline, obsoletely 3-nerved, more or less dentate, the lower shorter than the leaves, the upper as long or a little longer and imbricating. *Flowers* axillary, solitary or in pairs, very shortly pedicelled. *Perianth*-segments 5, 3 internal, 2 external. *Stamens* 8, inserted on the perianth-throat, unequal. *Nut* trigonous, very small, included, minutely punctate.

I.—NORTH-WEST FRONTIER: (1) Afghan border; *Griffith*, K. D., No. 4103! Kurram Valley, *Aitchison*, No. 215! (2) British Baluchistan; Bolan Pass, *Griffith*, No. 989 (1725)!

VI.—NORTH-WEST HIMALAYA: (1) Gilgit; Chaelu, 10,000 ft., *Giles*, No. 61! (2) Baltistan; near Gorakote, *Strachey & Winterbottom*, No. 723! Baleshahr Nullah, Astor, 7-8,000 ft., *Duthie*, No. 12493! Shingo Valley 10-11,000 ft., *Duthie*, No. 11908! (15) Kunawar; Pangi, *Stoliczka*!

This species could be confused, in India at least, with only *Polygonum paronychioides*, *Polygonum afghanicum* or *Polygonum tubulosum*. The absence of a perennial woody rootstock distinguishes it from the first two species, while its much more slender, flexuous, and almost leafless-looking habit distinguishes it from *Polygonum tubulosum*. Boissier (*Flora Orientalis*, vol. iv, p. 1033) without assigning any reason, expresses a doubt of the correctness of Meisner's statement (*DC. Prodr.* xiv, 92) that this species is found in Afghanistan. Apparently Boissier could not have seen Griffith's original numbers, which Meisner quotes, and which are also in the Calcutta Herbarium: they leave no room for doubt.

14. **Polygonum afghanicum* Meisn (*DC. Prodr.* xiv, 90).

Somewhat shrubby, with many erect, filiform, angled, pruinose-papillose branches; internodes about 1.3 cm. long, shorter above, and concealed by the stipules, which below are shorter than the internodes and hyaline, obsoletely 3-nerved, ciliate-lacerate. *Leaves* linear, 8-10 mm. long, setosely mucronate, midrib often lighter in colour than the lamina, otherwise nerveless, flat or with the margins revolute towards the apex, base very slightly narrowed. *Flowers* axillary, usually solitary, sessile. *Perianth*-segments 5, somewhat elongate, the two outer shortly awned. *Stamens* 8, unequal. *Nut* trigonous, finely punctulate.

I.—NORTH-WEST FRONTIER: (1) Afghanistan, 3,000 ft. and over, *Aitchison*, No. 470! (2) British Baluchistan; *Storks* (Herb. N. Dalzell, Bombay), No. 1135! Gwal, 6,000 ft., *Lace*, No. 3732!

The woody rootstock and erect strict habit distinguish this species quite clearly from *Polygonum polycnemoides*, which has an annual root and very slender and flexuous branches.

15. *Polygonum mollæforme* Boiss.

VI.—NORTH-WEST HIMALAYA: (3) Nubra, 14-16,000 ft., *T. Thomson*! (?) Zaling-Karpo Pass, and south of Bhabeh, *Stoliczka*!

16. Polygonum plebejum R. Br

- I.—NORTH-WEST FRONTIER AND PUNJAB: (1) Afghan border; Kohat to Kurram, *Bellew*, No. 578 A. ! (2) British Baluchistan; No specimens in the Calcutta Herbarium. (3) Scinde; No specimens in the Calcutta Herbarium. (4) Gujrat; No specimens in the Calcutta Herbarium. (5) Punjab west of the Sutlej; Peshawar, *Stewart*, Lahore, *Stewart*, Herb. Kurz, No. 2545 ! *Brandis*, Herb. Kurz, No. 2663 ! (6) Punjab east of the Sutlej; No specimens in the Calcutta Herbarium. (7) Bhawalpur, Rajputana, and Indore; No specimens in the Calcutta Herbarium.
- II.—CENTRAL PROVINCES: (1) Central Provinces; *Ferdon* !
- III.—PENINSULAR INDIA: (2) Canara; North Canara, Siddapore, *Talbot*, No. 1080 !
- IV.—UPPER GANGETIC PLAIN: Lucknow, *T. Anderson* ! Banda, *Mrs. Bell* !
- V.—BENGAL: (2) Chutia Nagpur; Dorunda, *Prain* ! (5) North Bengal; Caragola Ghat, *King* ! Naogaon, *Prain* ! (6) Central Bengal; Kushtia, *Kurs* ! Sibpur, *Kurs* !
- VI.—NORTH-WEST HIMALAYA: (19) Kulu; Beas Valley, from Bijaura and the base of the Rottang Pass, 4-6,500 ft., *Stoliczka* ! (21) Garhwal, *King* !
- VII.—NEPAL: Sheopara, *Wallich*, No. 1691 G. !
- VIII.—EASTERN HIMALAYA: (1) Sikkim and Darjeeling district, *T. Anderson* ! Sivoke, 800 ft., *King* ! (2) Bhutan; Shang-zong-la, 8,000 ft., *Dunghoo* !
- IX.—ASSAM: (4) Khasia Hills; *Simons* ! (8) Brahmaputra Valley; Dikho Valley, *Watt*, No. 10348 !
- X.—BURMA: (1) Chittagong District; Barkhal, on the Karnaphuli River, *Lister*, No. 119 ! (11) Sittang Valley; Tonkyeghat, *Kurs*, No. 519 !

VAR. effusa.

- I.—NORTH-WEST FRONTIER: (2) British Baluchistan, *Duke* ! Quetta, 5,600 ft., *Lace*, No. 4076 ! Fort Sandeman, *Harsukh*, Duthie's No. 20643 ! (7) Rajputana; Jodhpur, *King* !
- IV.—UPPER GANGETIC PLAIN: Dehra Dun, 2,000 ft., *King* !
- V.—BENGAL: (2) Chutia Nagpur, *Wood* !
- VI.—NORTH-WEST HIMALAYA: (4) Chitral; Bundai, 4,000 ft., *Harriss*, Duthie's No. 16581 !
- IX.—ASSAM: (7) Manipur; NOUNG SHONG KHONG Valley, 3,900 ft., *Watt*, No. 6302 !

X.—BURMA: (6) Shan Hills; Fort Stedman, *Abdul Huk*! (10) Irrawaddy Valley; *Kurs*, No. 2212! (12) Tenasserim; Chounza, 3,000 ft., *Gallatly*, No. 582!

VAR. *elegans*.

II.—CENTRAL PROVINCES: (1) Central Provinces; Saugor, *Vicary*!

IV.—UPPER GANGETIC PLAIN: Oude; *Wallich*, No. 1691 C!

V.—BENGAL: (5) North Bengal; Mahanadi River, *T. Thomson*! (6) Central Bengal, near Kushtia, *Kurs*! Calcutta, *C. B. Clarke*, No. 33570! Sibpur, *Kurs*!

VI.—NORTH-WEST HIMALAYA. (16) Kunawar and Bashahr; Pangi, *Stolicka*! Runang Pass, 12,000 ft., *Lace*, No. 565! (18) Chamba; *Ellis*, No. 433! (22) Kumaon; *Wallich*, No. 1691 D! Naini Tal, *T. Anderson*!

VII.—NEPAL: *Scully*, No. 50!

VIII.—ASSAM: (6) Naga Hills; *Prain*! (8) Brahmaputra Valley; *Mann*, No. 47! Dibrugarh, 300 ft., *C. B. Clarke*, No. 37726 A! Kamikha in Kamrup, *King's collector*!

IX.—CHITTAGONG and BURMA: (1) Chittagong District; Kasalong, *Gamble*, No. 7865! (6) North and South Shan Hills; Bhamo, *J. Anderson*! Shan States, *Abdul Huk*, No. 30! Fort Stedman, *Abdul Khalil*! (12) Tenasserim; Chu-ku, *Gallatly*, No. 952!

VAR. *indica*.

II.—CENTRAL PROVINCES: Jubbulpore, *C. B. Clarke*, No. 31972! Saugor, *Ferdon*! Chanda District, *Duthie*, Nos. 9715, 9716, 9718! Tapti Valley, *Duthie*, No. 10545.

III.—PENINSULAR INDIA: (2) North Canara; *Talbot*, No. 57! (4) Nilgiri Hills; Chemenguli, 7,000 ft., *Gamble*, No. 16218! (7) Northern Circars, *Cleghorn*! Aska, Ganjam District, *Gamble*, No. 14174! Nandial, Karnul District, 1,000 ft., *Gamble*, No. 10928! Bukkapatam, Anantapur District, 1,500 ft., *Gamble*, No. 20945! Cuddapah District, 4,500 ft., *Gamble*, No. 15155! Arcot, *Griffith*! Shevaroi Hills, *Perrottet*, No. 381! (10) Mysore; Bangalore, *Cameron*!

V.—BENGAL: (2) Chutia Nagpur; Kadampur Valley, *Wood*! Manbhum, *Campbell*! Singbhum, *Haines*, No. 143! (6) Central Bengal; Jessore, *C. B. Clarke*, No. 34587 H!

X.—BURMA: (6) Shan Hills; Ruby mines, *Abdul Huk*, No. 42! Khoni, *Praser*! Taungyi, *Abdul Khalil*! (7) Pegu; Yomah, *Kurs*, No. 519!

VAR. brevifolia.

I.—NORTH-WEST FRONTIER: (5) Punjab west of the Sutlej; Lahore, *Stewart*, Herb. Calc., No. 2545!

IV.—UPPER GANGETIC PLAIN: Etawah, *Hume*!

V.—BENGAL: (6) Central Bengal; Jessore, *Parry*! Bussirhat, *C. B. Clarke*, No. 21757 B! Baraset, *C. B. Clarke*, No. 34882! Jahanabad, Hughli District, *J. D. Nusker*! Sibpur, *Kurs*! (7) West Bengal, Ranigunge, *Kurs*!

VI.—NORTH-WEST HIMALAYA: (11) Hazara; Siran Valley, *Inayat*, Duthie's No. 20119! (18) Chamba; Dalhousie, 6,700 ft., *C. B. Clarke*, No. 23010 B! (19) Kulu; from Bilaspur to Mandi, 2-300 ft., *Stoliczka*! (20) Simla; Sutlej bank below Kumharsen, 3,000 ft., *Gamble*, No. 6144 B! (21) Garhwal; Mussoorie, 6,000 ft., *King*! Landour, 7,000 ft., *Vicary*! (22) Kumaon; Naini Tal, 7,000 ft., and Almora, 5,500 ft., *Strachey & Winterbottom*, No. 23!

VAR. micranthema.

I.—NORTH-WEST FRONTIER: (1) Afghan border; Shaik Budin, *Sanders*! (3) Scinde; Karachi District, *Ryan*! (4) Cutch; *Stoliczka*! (5) Punjab west of the Sutlej; Lahore, *Stewart*! (7) Rajputana; Abu Lake, *King*! Jodhpur, *King*!

IV.—UPPER GANGETIC PLAIN: Fattehgarh, *T. Anderson*! Dehra Dun, *King*!

V.—BENGAL: *Kurs*!

VIII.—EASTERN HIMALAYA: *T. Anderson*!

X.—BURMA: (6) Shan Hills, *Abdul Huk*, No. 16! Kyoukse, *Abdul Huk*!

VAR. Griffithii.

I.—NORTH-WEST FRONTIER: (1) Afghan border; Peshawar, *Stocks*! (7) Rajputana and Indore; Marwar, *King*! Goona, *King*! Morar, *Maries*, No. 234!

II.—CENTRAL PROVINCES: Saugor, *Ferdon*! Jubbulpur, *Beddome*, No. 47! *C. B. Clarke*, No. 31974 A! *Prain*, No. 46! Khandwa, *Duthie*, No. 8398!

III.—PENINSULAR INDIA: (1) Concan; *Stocks*! (4) Malabar; *Stocks*! *Law*!

IV.—UPPER GANGETIC PLAIN: (1) Agra and Oudh; Fattehgarh, *Griffith*! By the Chambal near Etawah, *Duthie*! (2) Bundelcund; Mahobra, *Duthie*, No. 6474!

V.—BENGAL: *Griffith*! (4) Behar, *Kurs*!

VAR. *polyneura*.

III.—PENINSULAR INDIA: (2) North Canara; Sirey, *Talbot*, No. 389!

Exclusive of the varieties *scindica* and *Miqueliana*, which have not been identified by the writer as present in the Calcutta Herbarium there have been enumerated above no fewer than eight forms of *Polygonum plebejum* R. Br. The writer finds it very difficult to accept all these forms as belonging to one species. The varieties in their typical condition at least differ very much more markedly from each other than allied but admitted species, such as *Polygonum recumbens* and *Polygonum cognatum*, or *Polygonum paronychioides* and *Polygonum tubulosum*, do from each other. The writer under other conditions than the purpose of the present paper admits would be strongly inclined to form four species, the composition of which may be briefly indicated here.

1st species =	{	<i>Polygonum plebejum</i> R. Br. proper.
		var. <i>effusa</i> .
		var. <i>elegans</i> .
		var. <i>micranthema</i> .
2nd species =	{	var. <i>indica</i> .
		var. <i>brevifolia</i> .
3rd species =		var. <i>Griffithii</i> .
4th species =		var. <i>polyneura</i> .

The altitudinal distribution of those so-called varieties, to which the reader may here be referred, would tend to corroborate the writer's ideas, which he had formed purely on morphological grounds. The *var. Griffithii*, in particular, is morphologically very distinct, and has a very limited altitudinal range.

SECTION IV.—AMBLYGONON Meisn.

17. *Polygonum orientale* Linn.

IV.—UPPER GANGETIC PLAIN: (1) Agra and Oudh; Dehra Dun, 2,000 ft., *Duthie*, No. 1973!

V.—BENGAL: (5) North Bengal; Garidura in the Terai, *Gamble*, No. 2696 B.! Caragola, *King*! (6) Central Bengal; Calcutta, *C. B. Clarke*, No. 3641! Howrah, *T. Anderson*! Sibpur, *Kurs*! (8) East Bengal; Comilla, *C. B. Clarke*, No. 6929!

VI.—NORTH-WEST HIMALAYA: (12) Kashmir, near Srinagar, *Schlagintweit*, No. 4458 !

IX.—ASSAM: (6) Naga Hills; Jaboca, *Prain's collector*, No. 715 !
(8) Brahmaputra Valley; Gauhati, *Simons ! Watt*, No. 12228 ! (9) Sylhet and Cachar; *Wallich*, No. 1709 B. !

X.—*BURMA: (1) Chittagong District; Kodala Hill, *King's collector*, Nos. 364 and 527 ! (6) Shan Hills; Fort Stedman, *Abdul Huk ! Shwebo, Abdul Huk*, No. 80 !
Hetto and Taungyi, *Abdul Khalil !* (10) Irrawaddy Valley; Mandalay and Mengoon, *J. Anderson !* (11) Sittang Valley; *Kurs*, No. 520 ! (12) Tenasserim; Chu-ku, *Gallatly*, No. 929 !

18. *Polygonum tomentosum* Willd.

II.—CENTRAL PROVINCES: Chanda District; *Duthie*, No. 9714 !

III.—PENINSULAR INDIA: (?) (2) Canara; *Birchy, Talbot*, No. 2051 ! (8) Carnatic; *G. Thomson !* (10) Mysore; *G. Thomson !*

V.—BENGAL: *T. Anderson !*

IX.—ASSAM: No specimens from this sub-sub-area in the Calcutta Herbarium.

X.—BURMA: (1) Chittagong District; Kodala Hill and Jandachin Hill, *King's collector*, Nos. 184 and 237 ! (7) Pegu; Yomah; Phoungyee, *Kurs*, No. 526 ! (9) Arracan; Kolodyne Valley, *Kurs !* (10) Irrawaddy Valley; Rangoon and Prome, *Wallich*, No. 1709 D, *in whole* in Calcutta Herbarium ! (11) Sittang Valley; Toungoo, *Kurs*, No. 525 !

XI.—MALAY PENINSULA AND ANDAMANS: (1) Peninsula; Perak, Ipoh, *Curtis*, No. 3178 ! Simpang, *L. Wray*, No. 2034 !
(2) Andamans; Hobdaypur and Port Mouat, South Andaman, *King's collector !* Great Cocos Island, *Prain !*

19. *Polygonum limbatum* Meisn.

II.—CENTRAL PROVINCES: Saugor, *Ferdon !*

III.—PENINSULAR INDIA: *Beddome*, No. 1112 ! (1) Concan, *Stocks ! Law !* (4) Malabar, *Stocks !*

IV.—UPPER GANGETIC PLAIN: (2) Bundelcund, *Vicary !*

V.—BENGAL, *Griffith ! T. Thomson !* (2) Chutia Nagpur; Oomra, Manbhum, 1,000 ft., *C. B. Clarke*, No. 34433 C !

X.—*BURMA: (6) Shan Hills; Bhamo, *J. Anderson !* (10) Irrawaddy Valley; Minbu district *Gage !*

SECTION V.—TOVARA A. Gray.

20. *Polygonum virginianum* Linn.

VI.—NORTH-WEST HIMALAYA: (11) Hazara; Kagan Valley, *Inayat*, Duthie's No. 20128! (18) Chamba; Bassued Forest, 6,000 ft., *Lace*, No. 1982!

VIII.—EASTERN HIMALAYA: (1) Sikkim; *Kurs*! Semari, Balasun, 7-8,000 ft., *Dungboo*!

IX.—*ASSAM: (6) Naga Hills; Piffima, 3,000 ft., *C. B. Clarke*, No. 40937 E.!

X.—*BURMA. (5) Kachin Hills; *Shaik Mokim*!

SECTION VI.—BISTORTA Tourn.

21. *Polygonum viviparum* Linn.

VI.—NORTH-WEST HIMALAYA: (1) Gilgit; *Giles*! (6) Zanskar; East of Suroo, Zalung Karpo Pass, 14-17,000 ft., *Stoliczka*! (7) Rupchu; *Stoliczka*! (8) Spiti; Sungnum and Kibles, *Stoliczka*! (11) Hazara; Kagan Valley, 11,200 ft., *Inayat*, Duthie's No. $\frac{20122}{b}$! (12) Kashmir; Gura's Valley, *Strachey & Winterbottom*, No. 548! Kishengunga Valley, *Strachey & Winterbottom*! Sangam Valley, 13,000 ft., *Duthie*, No. 13551! Musjid Valley, 12-13,000 ft., *Duthie*, No. 13244! Sind Valley, below Baltal, 9-10,000 ft., *Duthie*, No. 11535! (14) Lahul, *Hay*! Kardong, *Schlagintweit*, No. 3692! Rotang Pass, Chandra Valley side, 13,000 ft. *Holland*! (15) Kunawar; Pangi, *Stoliczka*! *Heyde*! (21) Garhwal; Near Mussoorie, *King*! Phuladaru in Nila Valley, 11-12,000 ft., *Duthie*, No. 203! (22) Kumaon, near Ralum, 11,500 ft., *Strachey & Winterbottom*, No. 5! Nipchang Valley in Darma, 14-15,000 ft., *Duthie*, Nos. 3331 and 3348!

VIII.—EASTERN HIMALAYA: (1) Sikkim; Jongri to Aloktong, 13-15,000 ft., *T. Anderson*! Jongri, 13,000 ft., *Gammie*! Bloktan, near Jongri, *King's collector*! Kinchin, 15,000 ft., *King's collector*, No. 556! Jongri and Lachen, *King's collector*! Tankra, 13,500 ft., *Gammie*, No. 419! Sebu Valley, 14,000 ft., *Gammie*, No. 1149! (2) Tibet and Bhutan; Patang-la, 10,000 ft., *King*, Nos. 4184 and 4186! Pedong-Oong, *Dungboo*! Pheemong, near Chumbi,

Dungboo! Beerom, 12,000 ft., and Rookah, 11,000 ft., *King's collector*! Syumpoo, *King's collector*, No. 106! Teumtong, 11,000 ft., *King's collector*! Phari, *King*, No. 4582!

22. *Polygonum sphærostachyum* Meisn.

VI.—NORTH-WEST HIMALAYA: (21) Garhwal; Dudutoli, 10,000 ft., *Strachey & Winterbottom*, No. 1! Kuari Pass, 13,000 ft., *Duthie*, No. 4363! (22) Kumaon; *Wallich*, No. 1683 B!

VII.—NEPAL *Wallich*, No. 1716! *Scully*, No. 171! Gosain Than, *Wallich*, No. 1683 D!

Wallich No. 1716 is quoted in the *Flora of British India* as the type of *Polygonum amplexicaule* var. *speciosa*, which in the Calcutta Herbarium is represented by the *Wallichian* sheet 1716 A.

VIII.—EASTERN HIMALAYA: (1) Sikkim; Gnatong, 12,000 ft., *King's collector*, No. 4378! Giagong, 13,000 ft., *King's collector*! Tallong above Tallum, 13,000 ft., *King's collector*! Tankra, 15,500 ft., *Gammie*, No. 572! Donkia 15-18,000 ft., *Gammie*, No. 812! (2) Tibet and Bhutan; Cho-le-la, *King's collector*! North-West of Chumbi below Tangkar-la, 14,000 ft., *Waddell*! Do-to, 4 miles from Phari, *Dungboo*! Phari, *King*, No. 4592! Va-ru-ting, Tibet-Bhutan frontier, *King's collector*!

23. *Polygonum perpusillum* Hook. f.

VI.—NORTH-WEST HIMALAYA: (21) Garhwal; above Chinpul, 14-15,000 ft., *Duthie*, No. 534! Above Bhowani, 13-14,000 ft., *Duthie*, No. 4360! (22) Kumaon; above Ralum, 14,500 ft., *Strachey & Winterbottom*, No. 39!

VIII.—EASTERN HIMALAYA: (1) Sikkim; Kinchin, 14,000 ft., *King's collector*! Cho-la, *King's collector*, No. 4489! Tankra, 15,000 ft., *Gammie*, No. 556! Tang-ka-la, *King's collector*! (2) Tibet and Bhutan; Punka-bee-se-mo, *Dungboo*, No. 378!

24. *Polygonum paleaceum* Wall.

IX.—ASSAM: (4) Khasia Hills, *Wallich*, No. 1684! *Oldham*, No. 8! *Mann*, Nos. 524, 614, 872, all from 3-6,000 ft.: Shillong 6,000, *C. B. Clarke*, No. 3868! A! *Gallatly*, No. 138! *Prain*, No. 26! Tserra, 4-4,500 ft., *C. B. Clarke*, Nos. 5364 and 7199!

X.—*BURMA: (6) Southern Shan Hills; Saikan, *Abdul Khalil*!

The writer agrees with Forbes and Hemsley in the opinion expressed in their *Enumeration of Chinese Plants*, under *P. confusum*, (*Jour. Linn. Soc.*, vol. xxvi, p. 336) that it is questionable whether Meisner's *Polygonum confusum* is the same as Wallich's *Polygonum palaceum*.

In De Candolle's *Prodromus*, vol. xiv, p. 125, Meisner quotes Wall. Cat. No. 1681, which is the type of *Polygonum paleaceum*, under *Polygonum sphærostachyum*. Under *Polygonum confusum* Meisner (*Wall. Plant. Asiat. Rar.*, vol. iii, p. 53) quotes Wall. Cat. No. 1683, which is *Polygonum sphærostachyum*, and he adds a note to the effect that *Polygonum confusum* grows along with and in the same places as *Polygonum sphærostachyum*, from which one would infer that Meisner's *Polygonum confusum* was not confined to Assam. Now if it were the same as *Polygonum paleaceum*, it would be so limited. The writer is, therefore, of opinion that Meisner's *P. confusum* is merely a form of *Polygonum sphærostachyum*.

25. * *Polygonum Bistorta* Linn. (*Sp. Plant.* 360).

Rootstock thick, twisted; annual stems glabrous, simple or with occasionally a branch-peduncle from the axil of one or two of the upper leaves; internodes long, 4-12 cm. *Leaves* glabrous or puberulous on the lower surface, lower leaves cordate with a very long petiole winged above, length of lamina to as much as 14 cm., breadth to as much as 8 cm., length of petiole to as much as 20 cm., upper leaves subsessile on the top of the stipular tube, half-amplexicaule, cordate-lanceolate, 2-5.5 cm. long and 1-1.5 cm. broad. *Stipules* glabrous, tubular, about 5 cm. long, eciliate nervosely striate. *Spike* dense, cylindrical, oblong-obtuse, 2.5-4.5 cm. long, about 2 cm. broad. *Flowers* large, on pedicels longer than the flowers, articulating just below the perianth, and arising in the axils of pale-brown, membranous, lanceolate, entire, closely imbricating bracts. *Perianth* segmented almost to the base, segments 5 sub-equal, broadly oval, with 4-5 distinct veins. *Stamens* 8, filaments long slender exserted, anthers minute. *Nut* trigonous elongated, style long slender trifid above, stigmas capitate.

VI.—NORTH-WEST HIMALAYA: *Royle*! (21) Garhwal; Binh Valley, 12-13,000 ft., *Duthie*, No. 541! Kumari Pass, 13,000 ft., *Duthie*, No. 4364!

VII.—NEPAL, *Scully*!

This in no way differs from the typical European or American plants, but none the less has been confused with the variety *speciosa* of *Polygonum amplexicaule*, and with *Polygonum sphærostachyum*. It resembles the first in the size of the spike but differs altogether in

the leaves, and is quite different from the second both in spike and leaves. Royle's sheet contains both *Polygonum Bistorta* and *Polygonum amplexicaule*, and the name *Polygonum speciosum*, which fits neither, is applied to the mixture of both. Kurz had detected that the greater part of the sheet was *Polygonum Bistorta* and had so named it.

26. *Polygonum amplexicaule* Don.

I.—NORTH-WEST FRONTIER: (1) Afghan border; Kurram Valley, *Aitchison*, No. 767!

IV.—UPPER GANGETIC PLAIN: Dehra Dun, *King*!

VI.—NORTH WEST HIMALAYA: (9) Chitral; Mirga, *Gatacre*, Duthie's No. 17502. (11) Hazara. Kahi Galli, Black Mountains, 8-9,000 ft., *Duthie*, No. 7560! Kagan Valley, 8,000-14,400 ft., *Inayat*, Duthie's Nos. 20116, 20116 A, 20117, 20118 A! Siran Valley, *Inayat*, Duthie's No. 20118! (12) Kashmir; Gulmarg, 8-11,000 ft., *Aitchison*, No. 29! *C. B. Clarke*, No. 30820 A! Kangar, Sind Valley, 5,500 ft.; Shapeyan, Kashmir Valley, 6,000 ft., *Gammie*! Sangam Valley, above Liddarwat, 12-13,000 ft., *Duthie*, No. 13554! From Kotsu to Palgam, *Gamble*! (15) Kunawar; Wangtu Valley above Grammon. *Brandis*, No. 3553! Brua Gad, 8-9,000 ft., *Lace*, Nos. 374 and 456! (18) Chamba; Chamba to Padri Pass, *Schlagintweit*, No. 3563! Dalhousie, 7-8,000 ft., *C. B. Clarke*, Nos. 22331 B and 22640! (20) Simla; Sirmoor, *Falconer*! *Vicary*! Narkanda, *Stoliczka*! Jakko and Gowai, *Gamble*, No. 1387 C and 5319 B! (21) Garhwal; Mussoorie, *King*! *Duthie*, No. 642! Nag Tibba, 9-10,000 ft., *Duthie*, No. 749! Jangla, 8-9,000 ft., *Duthie*, No. 207! (22) Kumaon; *Wallich*, Nos. 1715, 1716-3! Kathee, 7,200 ft., and Kalimundi, 8,900 ft., *Strachey & Winterbottom*, No. 12! Valley of the Gori, 5,500 ft., *Strachey & Winterbottom*, No. 13! near Paton, 7,000 ft., *Strachey & Winterbottom*, No. 14! Naini Tal, *T. Anderson*! *Hume*, Herb. Kurz, No. 55! *Strachey & Winterbottom*, No. 12!

VAR. *speciosa*.

VI.—NORTH-WEST HIMALAYA: (21) Garhwal; Deoban Range above Chakrata, 7,000 ft., *Duthie*, No. 1226!

VII.—NEPAL: *Scully*, No. 264! Nampa Godh, 11-12,000 ft., *Duthie*, No. 5924! Baeary, *Wallich*, No. 1716 A! Megu, 13,000 ft., *King's collector*!

VIII.—EASTERN HIMALAYA: (1) Sikkim; Phalut, *T. Thomson*! Tongloo, 9,000 ft., *King*! *Gamble*, No. 785! Singaleleh, 10,000 ft., *C. B. Clarke*, No. 13522 C! Sehn-zen, *King*, No. 4428! Gnatong, 13,000 ft., *Pantling*! Jongri, 12,000 ft., *King's collector*, No. 87! Chooabama, 12,000 ft., *King's collector*! Ko-poop, *Dungboo*! Tumbok, 10,000 ft., *C. B. Clarke*, No. 12765 F! Yakla, 12,000 ft., *C. B. Clarke*, No. 10093 A!

The Wallichian sheet of this species in the Calcutta Herbarium is numbered 1716 A, and labelled "*Polygonum cordifolium* Wall., Baeary, June, 1821" The Wallichian sheet in the Calcutta Herbarium which bears the No. 1716 is, as already mentioned, *Polygonum sphærostachyum* Meisn.

27. *Polygonum affine* Don.

VI.—NORTH-WEST HIMALAYA: (1) Gilgit; 13,000 ft., *Giles*, No. 131! Chuprot, *Strachey & Winterbottom*, No. 493! (4) Dras; 10,000 ft., *Duthie*, No. 13724! (8) Spiti and Parang; Upper Spiti Valley, 13-14,500 ft., *Stolicka*! (9) Chitral and Dir; Lowari Pass, 10,500 ft., *Harriss*, *Duthie's* No. 16592! (11) Hazara; Tap to Masenno glacier, *Schlagintweit*, No. 7257! Siran Valley, *Inayat*, *Duthie's*, No. $\frac{20114}{a}$! Kagan Valley, 14,400 ft., *Inayat*, *Duthie's* No. 20115! (12) Kashmir; Gurais Pass, *Strachey & Winterbottom*, No. 493! Above Gulmarg, 10-11,000 ft., *Duthie*, No. 11273! Agharwat (Gulmarg), 13,500 ft., *Gammie*! Badzulkod Nala, Liddar Valley, 12-13,000 ft., *Duthie*, No. 13401! Pir Panjal, 11,000 ft., *Gammie*! *Levinge*, *C. B. Clarke's* No. 27141! (14) Lahul; *Hay*! Foot of the Bara Latsa Pass, *Schlagintweit*, No. 4030! Upper Bhaga Valley, 9,500-13,000 ft., *Stolicka*! Rotang Pass, *Brandis*, No. 3559! (15) Kunawar; *Vicary*! Pangri, 11-16,500 ft., *Heyde*! (18) Chamba; *Ellis*! Chamba to Padri Pass, *Schlagintweit*, No. 3654! Sach Pass to Douai, *Lace*, No. 1467! (21) Garhwal; near Jumara camping-ground, 11-12,000 ft., *Duthie*, No. 204! Dudu Glacier moraine, 14-15,000 ft., *Duthie*, No. 532! Kuari Pass, 12-13,000 ft., *Duthie*, No. 4359! (22) Kumaon; *Wallich*, No. 1692! Near Milum, 14,500 ft. and below Ralum, 11,000 ft., *Strachey & Winterbottom*, No. 2! Pindi Glacier, 17,000 ft., *Collett*!

VII.—NEPAL: Budhi village, Western Nepal, *Duthie*, No. 5935!

28. Polygonum vaccinifolium Wall

VI.—NORTH-WEST HIMALAYA: (12) Kashmir; Marbul Pass, 11,400 ft., *C. B. Clarke*, No. 31317 A! (15) Kunawar? Harang, 12,000 ft., *Brandis*, No. 3549! (20) Simla; Sirmoor, *Vicary*! (21) Garhwal; Mussoorie, 7,000 ft., *King*! Rocks in the Ganges above Jangla, 11-12,000 ft., *Duthie*, No. 531! (22) Kumaon; Milum and near Ralum, 12 000 ft., *Strachey & Winterbottom*, No. 3!

VII.—NEPAL: *Scully*!

VIII.—EASTERN HIMALAYA: (1) Sikkim; *Watt*, No. 5279! Sughoo, *T. Thomson*! Jongri, 13,500-15,000 ft., *T. Anderson*, No. 1119! *C. B. Clarke*, No. 25822 C! Ze-lep-la, *Dungboo*! Tang-ka-la, *King's collector*! Gnatong, 12,000 ft., *Pantling*! Nathoot, *King's collector*, No. 4506! Ongla-thang, below Kinchinging, *King's collector*! Domkerka, 12,000 ft., *King's collector*! Lachung Valley, 9,000 ft., *Gammie*, No. 675! Tankra, 12,500 ft., *Gammie*, No. 444! Yakla, *King's collector*! (2) Tibet and Bhutan; Min-dook-la, *King's collector*, No. 527!

29. Polygonum Emodi Meisn.

VI.—NORTH-WEST HIMALAYA: *Duthie*! (20) Simla; Narcanda, 9,000 ft., *Brandis*, No. 3558! (22) Kumaon, *Wallich*, No. 1693!

VIII.—EASTERN HIMALAYA: *Hooker f.*! (1) Sikkim; Lachen, 9,000 ft., *King's collector*! Lachung Valley, 10,000 ft., *Gammie*!

SECTION VII.—PERSICARIA Meisn.

30. Polygonum glabrum Willd.

I.—NORTH-WEST FRONTIER: (1) Afghan border; Peshawar, *Stewart*, No. 177! (3) Scinde; Herb. *Dalsell*, No. 1202! Meera Hills, *Dalsell*! (5) Punjab, west of the Sutlej; Lahore, *Brandis*, No. 3006! (7) Rajputana, Indore; Abu, *King*! Gwalior, *Maries*, No. 21!

II.—CENTRAL PROVINCES: Saugor, *Vicary*! near Bhamgarh, Khandwa District, *Duthie*, No. 8401! Chanda District, *Duthie*, No. 9711!

III.—PENINSULAR INDIA: (1) Concan; *Herb. Ind. Or. H. f. & T.*! (2) North Canara; *Talbot*, No. 450! Kala Nuddi, Vincholi, *Talbot*, No. 941! (4) Malabar; *Herb. Ind. Or. H. f. & T.*! (5) Cochin and Travancore; Cochin, *Gamble*, No. 14805! Travancore, 1,000 ft., *Bourdillon*, No. 46! (7) Northern Circars; *Cleghorn*! (8) Carnatic; *Herb. Ind. Or. H. f. & T.*! Narsapully, Anantapur District, 2,000 ft., *Gamble*, No. 15257!

IV.—UPPER GANGETIC PLAIN: *Herb. Ind. Or. H. f. & T.*! Lucknow, *Bonavia*! Ghiror, *Duthie*, No. 6475!

V.—BENGAL: (2) Chutia Nagpur; Kewtbar, Palamow, *Wood*! Lohardugga, 2,000 ft., *C. B. Clarke*, No. 33946! Domree, Hazaribagh, 1,000 ft., *C. B. Clarke*, No. 33871! D! Manbhum, *Campbell*, No. 8227! *Watt*, No. 8423! Damodar River, *Prain*! Kalikund, Sonthal Pergunnahs, *Gamble*, No. 10671! (5) North Bengal; Purneah, *Kurs*! Pabna, *Griffith*! Naogaon, *Prain*! (6) Central Bengal; Rajpore, *Kurs*! Faridpore, *C. B. Clarke*, No. 7480! Sibpur, *Gammie*! Midnapur, *Abdul Huk*!

VI.—NORTH-WEST HIMALAYA: *Royle*! (21) Garhwal; Mussoorie, *King*! (22) Kumaon, 1,000 ft., *Strachey & Winterbottom*, No. 25!

VIII.—EASTERN HIMALAYA: (1) Sikkim; *T. Anderson*!

IX.—ASSAM: No specimens from this sub-sub-area in the Calcutta Herbarium.

X.—BURMA: (6) Shan Hills; *Abdul Huk*, No. 11! (11) Irrawaddy Valley; Mandalay and Mengoon, *T. Anderson*! Prome, *Kurs*, No. 2213! Minbu district, *Gage*!

The writer is unable to refer any specimen in the Calcutta Herbarium to either VAR. *scabrinervis* or VAR. *macrantha*, as described in the *Flora of British India*.

81. *Polygonum amphibium* Linn.

VI.—NORTH-WEST HIMALAYA: (2) Baltistan; Iskardo Valley, 7,000 ft., *Strachey & Winterbottom*, No. 843! (12) Kashmir; Wolar Lake, 5,150 ft., *C. B. Clarke*, No. 29147 B! (22) Kumaon; Naini Tal Lake, *Madden*! *T. Anderson*!

VIII.—* EASTERN HIMALAYA: (2) Tibet; In a small lake near Chumbi, *King's collector*!

82. *Polygonum lanigerum* R. Br.

I.—* NORTH-WEST FRONTIER: (7) Rajputana; Abu, *King*!

- IV.—UPPER GANGETIC PLAIN: Dehra Dun, *Duthie*, No. 1974!
- V.—BENGAL: (3) Tirhut; Kissengunge, *Kurs*! (5) North Bengal; Siliguri, *C. B. Clarke*, No. 26458! Titalya, *Kurs*! Banks of the Ganges near Sahibgunge, *Kurs*! (8) East Bengal; Jheels near Dacca, *Griffith*, No. 134!
- VI.—NORTH-WEST HIMALAYA: (20) Simla; Sirmoor, *Vicary*! (22) Kumaon; Bhim Tal, 4,400 ft., *Strachey & Winterbottom*, No. 15!
- VII.—NEPAL: *Wallich*, No. 1714-2.
- VIII.—EASTERN HIMALAYA: No specimens in Calcutta Herbarium.
- IX.—ASSAM: (8) Brahmaputra Valley; Nowgong, *Simons*! Tezpur, *C. B. Clarke*, No. 37665!
- X.—BURMA: (6) Shan Hills; Chouchu, *Abdul Huk*, No. 67!

In the opinion of the writer, *Wallich*, No. 1717, is not a variety of this species, but is to be referred to *Polygonum lapathifolium* Linn. *Wallich*'s sheet shows no more canescence than many examples of *Polygonum lapathifolium* from Burma and elsewhere, which show all stages from a quite evident tomentum on the lower surface of the leaves to leaves quite glabrous except for the scabrid midrib and margin; in its annual habit, its glandular peduncles and perianth, *Wallich*'s plant in no way differs from *Polygonum lapathifolium* Linn.

33. *Polygonum lapathifolium* Linn.

- I.—NORTH-WEST FRONTIER: (1) Afghan border; Kurram Valley, *Aitchison*, No. 866! Peshawar, *Stewart*, No. 45! (2) British Baluchistan; Shalkot, *Duke*!
- V.—BENGAL: (5) North Bengal; Mahanuddi, *T. Thomson*! (6) Central Bengal; Faridpur, *C. B. Clarke*, No. 7515! Sibpur, *Kurs*!
- VI.—NORTH-WEST HIMALAYA: (1) Gilgit; *Giles*! Nittar Valley, 9-10,000 ft., *Duthie*, No. 12444! (9) Chitral and Dir; Dir, 5,600 ft., *Harris*, *Duthie*'s No. 16582! (11) Hazara; Plains to 3,500 ft., *Stewart*, No. 30! Kagan Valley, *Inayat*, *Duthie*'s No. 20121! (22) Kumaon; Naini Tal, 6,500 ft., *Strachey & Winterbottom*, No. 17!
- IX.—ASSAM: (8) Brahmaputra Valley; *Simons*! Makum Junction, *Chatterjee*!
- X.—BURMA: (6) Shan Hills; *Abdul Huk*, No. 10! Maymyo Hill, *Badal Khan*, No. 167! Fort Stedman, *King's collector*,

No. 530! Saga, Saikan, Taungyi, *Abdul Khalil*! (10) Irrawaddy Valley; *Wallich*, No. 1717! (11) Sittang Valley; *Kurs*, No. 517!

SUB-SP. maculatum

VI.—NORTH-WEST HIMALAYA: (2) Baltistan; Iskardo, 7-8,000 ft., *Duthie*, No. 12061! (5) Ladakh; Indus Valley from Upsbi to Leh, 12-14,000 ft., *Stoliczka*! (12) Kashmir; Suroo to Sanko, *Stoliczka*! (21) Garhwal; Mussoorie, 7,000 ft., *King*!

The sub-species, which here represents the VAR. *nodosa* of the *Flora of British India*, might quite well be raised to specific rank as *Polygonum nodosum* Pers., a course which Forbes and Hemsley have taken in their *Enumeration of Chinese plants*. Judging from the Calcutta Herbarium specimens, the altitudinal range of the sub-species is strikingly different from the species proper, which would tend to support the view of their being specifically different.

34. Polygonum Persicaria Linn.

I.—NORTH-WEST FRONTIER: (1) Afghan border; Kurram Valley, *Harsukh*, *Duthie's* Nos 15480 and 15481!

VI.—NORTH-WEST HIMALAYA: (1) Gilgit, 10,000 ft., *Giles A.*, No. 51! (11) Hazara; Jaba, 3,700 ft., *Duthie*, No. 22126!

35. Polygonum minus Huds.

III.—PENINSULAR INDIA: *Wight*, K. D., No. 2459! (4) Nilgiri Hills; *Schmidt*! Kolahambi, 5,000 ft., *Gamble*, No. 16760! (9) Coimbatore, Madura, Tinnevely; Pallangi, Pulney District, *Bourne*, No 1150!

V.—BENGAL: *Griffith*, K. D., No. 4106 in part!

VI.—NORTH-WEST HIMALAYA: 12,000 ft., *T. Thomson*! (15) Kunawar and Bashahr; Ribba, 7,500 ft., *Lace*, No. 616! (21) Garhwal; Tons Valley, 3,000 ft., *Gamble*!

VII.—NEPAL: *Wallich*, 1722 A!

VIII.—EASTERN HIMALAYA: (1) Sikkim; Rili River, *Dungboo*!

IX.—ASSAM: (4) Khasia Hills, 2-3,000 ft., *Mann*, No. 419! (7) Manipur; Nong Shong Khong Valley, 3,900 ft., *Watt*, No. 6304! (8) Brahmaputra Valley; *Badal Khan*, No. 36! Dibrugarh 300 ft., *C. B. Clarke*, No. 37784! Gauhati, *King's collector*! Orang, *Shaik Mokim*, No. 61! (9) Sylhet; Companyganj, *C. B. Clarke*, No. 14347 A!

X.—BURMA: (1) Chittagong District, *Herb. Ind. Or. H. f & T.*! (6) Shan Hills; Bhamo, *T. Anderson*!

XI.—MALAY PENINSULA: Pahang, *Ridley*, No. 1616!

36. Polygonum assamicum Meisn.

IX.—ASSAM: (4) Khasia Hills; *Herb. Ind. Or. H. f & T.*! (6) Naga Hills; *Prain*! (8) Brahmaputra Valley; *Mann*, No. 405! Upper Dihing River, Lakhimpur District, *Mann*, No. 529!

37. Polygonum viscosum Ham.

VII.—NEPAL: *Wallich*, No. 1713 A!

IX.—ASSAM: (4) Khasia Hills; *Herb. Ind. Or. H. f & T.*! *Oldham*! (6) Naga Hills; Jaboca, *Prain's collector*, No. 734! (8) Brahmaputra Valley; *Mann*, No. 139! Dibrugarh; *A. C. Chatterjee*! Goalpara; *Fisher*! (9) Sylhet; *C. B. Clarke*, No. 18133 B! Phenchoojung, *C. B. Clarke*, No. 6968!

X.—* BURMA: (1) Chittagong District; *King's collector*, No. 310! (6) Shan Hills; Fort Stedman, *Abdul Huk*!

38. Polygonum stagninum Ham.

V.—BENGAL: (2) Chutia Nagpur; Basia, 2,000 ft., *C. B. Clarke*, No. 33942! (5) North Bengal; banks of Panar River, and banks of the Ganges near Sahibgunj, *Kurs*! Caragola, *C. B. Clarke*, No. 11743! (8) East Bengal; Dacca, *C. B. Clarke*, Nos. 7106 B and 7406! Ramgopalpore, Mymensingh District, *C. B. Clarke*, No. 17240 E!

VI.—NORTH-WEST HIMALAYA: (18) Chamba; 3,000 ft., *C. B. Clarke*, Nos. 24344 and 24348! (22) Kumaon; below Almora, 5,500 ft., *Strachey & Winterbottom*, No. 19!

IX.—ASSAM: (4) Khasia Hills; 1-2,000 ft., *Mann*! (8) Brahmaputra Valley; *Fisher*! Sibsagar, 250 ft., *C. B. Clarke*, No. 38026 B. (1) Sylhet; Kurrimgunj, *C. B. Clarke*, No. 6993!

X.—BURMA: (11) Sittang Valley; *Kurs*, Nos. 528 and 529!

39. Polygonum barbatum Linn.

I.—NORTH-WEST FRONTIER: (1) Afghanistan; *Griffith*, K. D., No. 4115! (6) Punjab, east of the Sutlej; *Griffith*! (7) Rajputana; Abu, *Duthie*, No. 6704!

- II.—CENTRAL PROVINCES: Saugor, *Vicary*! Khandwa, *Duthie*, No. 8402! Chanda Distric, *Duthie*, Nos. 9712 and 9713!
- III.—PENINSULAR INDIA: *G. Thomson*! *Wight*, K. D., No. 2454! (5) Travancore; *Lawson*, No. 159!
- IV.—UPPER GANGETIC PLAIN: Dehra Dun, *Vicary*!
- V.—BENGAL: (2) Chutia Nagpur; Ranchi, 1,500 ft., *C. B. Clarke*, No. 21360! Domree, Hazaribagh, 1,000 ft., *C. B. Clarke*, No. 33862 A! Palamow, *Gamble*, No. 8795! Bokaro River, *Prain*! Parasnath, *T. Thomson*! (5) North Bengal, *T. Anderson*! (6) Central Bengal; Sibpur, *Gammie*!
- VI.—NORTH-WEST HIMALAYA: *Royle*! (22) Kumaon, *Wallich*, No. 1708 A!
- VII.—NEPAL: *Buchanan-Hamilton*!
- VIII.—EASTERN HIMALAYA: (1) Darjeeling District, 2,000 ft., *King*! (2) Bhutan, *Dunghoo*!
- IX.—ASSAM: (4) Khasia Hills; *Herb. Kurs*! (6) Naga Hills; *Prain*! (8) Brahmaputra Valley, *Jenkins*!
- X.—BURMA: (2) Lushai Hills; Changsil, *Praser*! (6) Shan Hills; Bhamo, *T. Anderson*! Indine and Saga, *Abdul Khalil*! Meingyan, *Abdul Huk*! Maymyo Hill, *Badal Khan*, No. 98! Makhaye Hill, *King's collector*! (7) Pegu Yomah; Myodwine River, *Kurs*, No. 527! Pansway, *Kurs*, No. 528! (9) Arracan; Akyab, *Kurs*, No. 528! (11) Sittang Valley; Tonkyeghat, *Kurs*, No. 528! (12) Tenasserim; Moulmein, *Falconer*, No. 324! Martaban, *Kurs*, No. 528!
- XI.—MALAY PENINSULA AND ANDAMANS: (1) Malay Peninsula; Malacca, *Griffith*! Singapore, *Hullett*, No. 10! *Ridley*, Nos. 1604 and 3756! Penang, *Curtis*, No. 2785! Perak, *Curtis*, No. 3179! (2) Andamans; Port Mouat, *King's collector*! Anikhet and Bajajagdah Hill, South Andaman; *King's collector*! Table Island, *Prain*!

Were it not that it is the writer's purpose in this paper to follow the *Flora of British India* as far as possible, he would certainly consider *P. stagninum* and *P. barbatum* as one species, placing *P. stagninum* as a variety of *P. barbatum*. The difference between the two is merely a matter of more or less tomentum. The plants with thickly silkily strigose leaves and branches have invariably the pubescence extending on to the bracts, the plants which are almost glabrous or show only a very moderate amount of scabridity have always glabrous bracts. The writer has in vain attempted to lay hold of any more satisfactory character. Accordingly all the plants with hairy bracts have been

lumped together as *P. stagninum* Ham., and all those with glabrous bracts as *P. barbatum* Linn. *P. serrulatum* Lagasc., which has also glabrous bracts, is distinguished from *P. barbatum* by its narrower, more linear-looking, and almost always glabrous leaves with a slightly cordate base or if not cordate at least never cuneate as in *P. barbatum*. The leaves of *P. serrulatum* when dry are rather green in colour, those of *P. barbatum* dark-brown. With regard to the note under *Polygonum stagninum* in the *Flora of British India*, it may be of interest to record here that, in the Calcutta Herbarium, there is a sheet of undoubted *Polygonum barbatum* Linn., which is labelled *P. hispidum*, and has a short latin description appended, both name and description being in Buchanan-Hamilton's own handwriting. The occurrence of this sheet certainly supports Meisner's reference of Hamilton's *Polygonum hispidum* to *Polygonum barbatum* Linn. The *Polygonum barbatum* of Roxburgh's unpublished *Icones* is not *Polygonum tomentosum* Willd., which has short racemes and an orbicular nut and is well represented under its proper name amongst the *Icones*. The *Polygonum barbatum* of Roxburgh's *Icones* is an excellent representation of *Polygonum macranthum* Meisn., which is also well described as *Polygonum barbatum* in his *Flora Indica*, where the reference to the twiggy racemes, so characteristic of *Polygonum macranthum* Meisn., is unmistakeable.

It may not be superfluous to give here the writer's identification of all Roxburgh's drawings of *Polygonums* in the *Icon. Ined.*, vol. vii:—

Name on Roxburgh's drawing.				Name under which now known.	
104. <i>Polygonum nutans</i>	.	.	R 1135	=	<i>Polygonum lapathifolium</i> Linn.
105. <i>Polygonum lanatum</i>	.	.	R 939	=	<i>Polygonum lanigerum</i> Br.
106. <i>Polygonum pilosum</i>	.	.	R 934	=	<i>Polygonum orientale</i> Linn.
107. <i>Polygonum tomentosum</i>	.	.	628	=	<i>Polygonum tomentosum</i> Willd.
108. <i>Polygonum glabrum</i>	.	.	629	=	<i>Polygonum glabrum</i> Willd.
109. <i>Polygonum tenellum</i>	.	.	R 1134	=	? <i>Polygonum flaccidum</i> Meisn.
110. <i>Polygonum barbatum</i>	.	.	631	=	<i>Polygonum macranthum</i> Meisn.
111. <i>Polygonum rivulare</i>	.	.	630	=	<i>Polygonum barbatum</i> Linn.
112. <i>Polygonum flaccidum</i>	.	.	R 1056	=	<i>Polygonum serrulatum</i> Lagasc.
113. <i>Polygonum perfoliatum</i>	.	.	1412	=	<i>Polygonum perfoliatum</i> Linn.
114. <i>Polygonum elegans</i> Sol. Mss.	.	.	632	=	<i>Polygonum plebejum</i> R. Br. var. <i>indica</i> of R. B. I.

40. *Polygonum serrulatum* Lagasc.

I.—NORTH-WEST FRONTIER: (1) Afghan border; Peshawar, *Stewart*, No. 149! Dera Ismail Khan, *Harsukh*, Duthie's No. 15733! (2) British Baluchistan; Quetta, *Hamilton*! (3) Indore; Goona, *King*, No. 85!

III.—PENINSULAR INDIA: *Talbot*, No. 3140!

IV.—UPPER GANGETIC PLAIN: (1) Rohilcund, Agra and Oudh; Dehra Dun, *King*! Forests of North Oudh, *R. Thompson*! Lucknow, *Bonavia*, No. 62! Banks of the Gumpti near Indalpur, *Duthie*, No. 4355! (2) Bundelcund; *Vicary*!

V.—BENGAL: (6) Central Bengal; Howrah, *T. Anderson*! Sibpur, *Kurs*! (8) East Bengal; *Unknown collector*!

VI.—NORTH-WEST HIMALAYA: (21) Garhwal; Deoban, 8,000 ft., *Rogers*! Mussoorie, *Duthie*, No. 570! (22) Kumaon; Naini Tal, *T. Anderson*!

X.—BURMA: (1) Chittagong District; Rangamatti, *C. B. Clarke* No. 8291! (6) Shan Hills; *Abdul Huk*, No. 33! Fort Stedman, *Abdul Huk*! Kumay Road, *Abdul Huk*, No. 97! Makhaye Hill, *King's collector*! Maymyo Hill, near Mandalay, *Badal Khan*, Nos. 97 and 163! Monay, *Abdul Khalit*!

XI.—MALAY PENINSULA AND ANDAMANS: Nicobar Islands; Katchall, *Kurs*!

The writer has failed to identify the variety *Donii* in the Calcutta Herbarium.

41. *Polygonum Posumbu* Ham.

IV.—UPPER GANGETIC PLAIN: Dehra Dun, 2,000 ft., *King*!

VI.—NORTH-WEST HIMALAYA: (12) Kashmir; Gulmarg, 9-10,000 ft., *Duthie*! (19) Kangra; *Edgeworth*! (20) Simla; Sirmoor, *Vicary*! (22) Kumaon; Hurrara, 4,000 ft., *Strachey & Winterbottom*, No. 18!

VIII.—EASTERN HIMALAYA: (1) Sikkim; Kajell, *T. Anderson*! Little Rungeet, *T. Thomson*! Great Rungeet, *Kurs*! *T. Anderson*, No. 234! Ratong to Yoksum, 2,500 to 5,000 ft., *T. Anderson*, No. 1186! Soke, 3,000 ft., *C. B. Clarke*, No. 24902 B! Rishap, 4,000 ft., *C. B. Clarke*, No. 13584 C! Sureil, 5,000 ft., *King*! *Gage*! (2) Tibet and Bhutan; Shong-ong-la, 8,000 ft., *Dungboo*!

IX.—ASSAM: (1) Daphla Hills; Dikrung Valley, *Lister*! (4) Khasia Hills; *Herb. Ind. Or. H. f. & T.*! (6) Naga Hills; Tingali Bam, *Prain's collector*, No. 178! (8) Brahmaputra Valley; Dibrugarh, 300 ft., *C. B. Clarke*, No. 37743 A! Golaghat; Sibsagar, 300 ft., *C. B. Clarke*, No. 40750!

42. **Polygonum mite* Schrank. (*Bair. Fl.* 1. 688).

Annual, sub-erect; branches glabrous. *Leaves* very shortly petioled, arising from the base of the stipular tube, lamina 2.5 cm. to 5.5 cm.

long, lanceolate, acute, glabrous or with a few scattered hairs on both surfaces, especially on the midrib, margins ciliolate. *Stipules* with scattered adpressed strigose hairs and cilia as long as the tube. Floriferous portion of raceme 1.3 to 3 cm. long, loose, interrupted; peduncles glabrous, with stout cilia; *perianth* glabrous; *nutlet* small black, plano-convex or trigonous.

VI.—NORTH-WEST HIMALAYA: (12) Kashmir; near Gulmarg, 8-9,000 ft., *Duthie*! Khairpore, Kashmir Valley, 6,000 ft., *Gammie*! (15) Kunawar; Pangi, *Stoliczka*! (18) Chamba; Dalhousie, 7,000 ft., *C. B. Clarke*, No. 22299B! Between Alwas and Tisa, 4,000 ft., *Gammie*, No. 18428! (19) Kulu; Beas Valley from Bijaura to the base of the Rottang Pass, 4-6,500 ft., *Stoliczka*! (20) Simla; *Duthie*, Nos 8817 and 10084! *Inayat*, No. 8814! (21) Garhwal; Mussoorie, 7,000 ft., *King*! *Duthie*, No 744!

43. *Polygonum Hydropiper* Linn.

I.—NORTH-WEST FRONTIER: (1) Afghan border; Hango, 3,200 ft., *Inayat*, *Duthie's* No. 20928! Ushtarzai, 1,800 ft., *Inayat*, *Duthie's* No. 20930!

V.—BENGAL: (2) Chutia Nagpur; Damodar River, *Prain*! (5) North Bengal; Purneah, *Kurs*! (6) Central Bengal; Sibpur, *Kurs*! (7) West Bengal, near Ranigunge, *Kurs*!

VI.—NORTH-WEST HIMALAYA: (1) Gilgit; *Strachey & Winterbottom*, No. 985! *Giles*, No. 272! (10) Swat Valley; Chakdara, *Harriss*, *Duthie's* No. 16585! (18) Chamba; Chamba to Masrond, 3,000 ft., *Lace*, No. 1834! (22) Kumaon, *King*! Bagesar, 3,200 ft., *Strachey & Winterbottom*, No. 16!

VIII.—EASTERN HIMALAYA: (1) Darjeeling District; Darjeeling, 6,000 ft., *Lister*! Sureil, 5,000 ft., *Gage*!

IX.—ASSAM: (4) Khasia Hills; 4-6,000 ft., *Mann*, Nos. 237 and 623! (6) Naga Hills; Kohima, 3-4,000 ft., *Prain*! Shillong, *Prain*, No. 57! (8) Brahmaputra Valley; Gauhati, *King's collector*! Jala Busti, near Teock Ghat, *Prain's collector*!

VAR. **glandulosissima*.

III.—PENINSULAR INDIA: (2) North Canara; *Talbot*, No. 2682! Near Hubli, Dharwar District, *College of Science, Poona*! Covered everywhere with numerous minute glands, everywhere perfectly glabrous and eciliate.

44. Polygonum flaccidum Meisn.

- I.—NORTH-WEST FRONTIER: (1) Afghan border; Peshawar, *Stewart*, No. 223! (5) Punjab, west of the Sutlej; Rawal Pindi. *Aitchison*, No. 1009!
- III.—PENINSULAR INDIA: *Wight*, K. D., No. 2453! (4) Nilgiris, *G. Thomson*!
- IV.—UPPER GANGETIC PLAIN: Dehra Dun, *King*!
- V.—BENGAL: (2) Chutia Nagpur; Koshang, Singbhum, 2,000 ft., *Gamble*, No. 8993! (5) North Bengal; below Siliguri, *Kurs*! (6) Central Bengal; Jessore, *Parry*! Rajpore, *Kurs*! Badoorea, 24-Pergunnahs, *C. B. Clarke*, No. 34857 A! Sibpur, *Gammie*!
- VI.—NORTH-WEST HIMALAYA: (18) Chamba, 3,000 ft., *C. B. Clarke*, No. 24273 A! Dalhousie, 7,000 ft., *Grant*! *C. B. Clarke*, No. 23131C! (22) Kumaon; Small lake near Bhim Tal, 4-5,000 ft., *Duthie*, No. 4354! Near Ranikhet, 5-6,000 ft., No. 5936!
- VIII.—EASTERN HIMALAYA: (1) Darjeeling District; Rungbee, 5,000 ft., *Gamble*, No. 2692C! Rishap, 3,000 ft., *C. B. Clarke*, No. 12572B! Mungpoo, 3,000 ft., *C. B. Clarke*, No. 26748 A! (2) Bhutan, *Parkes*!
- IX.—ASSAM: (6) Naga Hills; Kohima, *Prain*! *C. B. Clarke*, No. 41704! Shillong, 5,000 ft., *C. B. Clarke*, Nos. 40329 A and 44681 A! (8) Brahmaputra Valley; Dikho Valley, *Watt*, No. 10349! Jorhat, Sibsagar, 250 ft., *C. B. Clarke*, No. 38044 F! Sibsagar, *Watt*, No. 10373! Teock Ghat, near Tingali Bam, *Prain's collector*, No. 338!
- X.—BURMA: (1) Chittagong Hill Tracts; *King's collector*, No. 197! (3) Chin Hills; *Abdul Huk*! (6) Shan Hills; Bhamo, *J. Anderson*! (11) Sittang Valley, *Kurs*, No. 524!
- XI.—MALAY PENINSULA: Kintra River, *King's collector*, No. 809! Larut, *Kunstler*, No. 2503! Perak, *Ridley*, No. 2964! Pahang, *Ridley*, No. 1335!

VAR. hispida.

- III.—PENINSULAR INDIA: (4) Nilgiris, *G. Thomson*! (7) Northern Circars; Dohu Ghat, Ganjam District, 2,500 ft., *Gamble*, No. 1366!
- V.—BENGAL: (8) East Bengal; Dacca, *C. B. Clarke*, No. 8143!

- VI.—NORTH-WEST HIMALAYA: (21) Garhwal; Lobah, 5-6,000 ft., *Duthie*, No. 4350!
- VII.—NEPAL Ramebund, *Wallich*, No. 1723 A in part!
- VIII.—EASTERN HIMALAYA. *T. Thomson*! (1) Darjeeling District, *Kurz*!
- X.—BURMA. (6) Shan Hills, *Abdul Huk*! (7) Pegu Yomah; Phounggee, *Kurz*, No. 524! (11) Sittang Valley; Tonghoo, *Kurz*, No. 523! Pegu, *Brandis*, No. 1399! (12) Tenasserim, *Helper*, K. D., No. 4133!

The Wallichian sheet 1723A in the Calcutta Herbarium contains two plants of *Polygonum serrulatum* Lagasc., and one indifferent specimen of *Polygonum flaccidum* var. *hispida*. The mixture is labelled *Polygonum hispidum* Hamilt. *apud* Don, *Prodr. Nepal. Legi in Napalia ad Ramebund*, Aug. 1821. As explained under *Polygonum barbatum*, the evidence appears to the writer to be in favour of referring *Polygonum hispidum* Ham., to *Polygonum barbatum* Linn.

The description in Don's *Prodromus* is vague enough but appears to the writer to fit *Polygonum barbatum* better than *Polygonum flaccidum* var. *hispida*. the term '*spicis densifloris*' could scarcely be applied correctly to the latter.

45. *Polygonum macranthum* Meisn. *P. barbatum* Roxb.

- IX.—ASSAM. *Griffith*, K. D., No. 4109! *Lister*! (4) Khasia Hills; *Hooker f. & Thomson*, No. 21! Soyung, 5,000 ft., *C. B. Clarke*, Nos 44720 A and 45412 C!

All the above-quoted specimens show minute glands both on perianth and bracts.

SECTION VIII.—CEPHALOPHILON Meisn.

46. *Polygonum humile* Meisn.

- VI.—NORTH-WEST HIMALAYA: (22) Kumaon; Ralum, 8,500 ft., *Strachey & Winterbottom*, No. 45! Gori Valley above Munshiari, 6-7,000 ft., *Duthie*, No. 3334!

47. *Polygonum glaciale* Hook. fil.

- I.—NORTH-WEST FRONTIER: (1) Afghan border; Sikaram, 12,000 ft., Kurram Valley, *Aitchison*, No. 1203!
- VI.—NORTH-WEST HIMALAYA: (12) Kashmir; above Kilam, 12,000 ft., *Aitchison*! Tilail, 12,000 ft., *C. B. Clarke*, No. 30800B! (22) Kumaon; Milam Glacier, 12,500 ft.

Strachey & Winterbottom, No. 44! Near Bhidang in the Dhauli Valley, Darma, 13-14,000 ft., *Duthie*, No. 3350!

48. *Polygonum alatum* Ham.

I.—NORTH-WEST FRONTIER: (1) Afghan border; Kurram Valley, *Aitchison*, No. 986!

III.—PENINSULAR INDIA: (4) Nilgiris, *Schmidt*! Ootacamund, 7,000 ft., *King*! *Gamble*, No. 15353! (9) Madura, Kodaikanal Lake, *Bourne*, No. 695! (10) Mysore; Bababuden Hills, *Talbot*, Nos 2369 and 2988!

IV.—UPPER GANGETIC PLAIN: Dehra Dun, 2,000 ft., *Duthie*!

V.—BENGAL: (2) Chutia Nagpur, Parasnath, *T. Thomson*! *Kurz*!

VI.—NORTH-WEST HIMALAYA: (1) Gilgit, Jindrote, 7,500 ft., *Giles*, No A 24! (9) Chitral; Mirga, *Harris*, *Gatacre*, *Duthie's* Nos 16580, 17510, 17511! (11) Hazara: *Stewart*, No 571! *Schlagintweit*, No. 6409! Kagan Valley, 9,000 ft., *Inayat*, *Duthie's* No 20125! Kahi Galli, 8,000 ft., *Duthie*, No. 7562! (12) Kashmir, Suru, *Stoliczka*! Sonamurg, 8-9,000 ft., *Duthie*, No. 11502! Pir Panjal, 9,000 ft., *Gammie*! (13) Kistawar; Badrawar, 4-10,000 ft., *Stoliczka*! (15) Kunawar; Bashahr, 9,200 ft., *Lace*, No 495! (18) Chamba; Dalhousie, 7,000 ft., *Clark*, Nos 135 and 136! *C. B. Clarke*, No. 22114! (20) Simla; Sirmoor, *Vicary*! Simla, 7,000 ft., *Hawkes*! *Gamble*, No. 5161 C! (21) Garhwal; Mussoorie, 7,000 ft., *King*! (22) Kumaon; near Tola, 11,500 ft., *Strachey & Winterbottom*, No. 9! Naini Tal, 7,000 ft., *Strachey & Winterbottom*, No. 9! *Hume*!

VII.—NEPAL: *Wallich*, No. 1701-1.

VIII.—EASTERN HIMALAYA: (1) Sikkim; Punkabari, *Kurz*! Rungno Valley, *Kurz*! Lebong, *T. Thomson*! Mungpano, 3,500 ft., *Gammie*! Little Rungcet, *Kurz*! *T. Anderson*, No 239! Senchal, 8,000 ft., *Gamble*, No. 2693 A! Tonglo, 10,000 ft., *King's collector*! Lachung Valley, 8,500-13,000 ft., *Gammie*, Nos 938 and 1057! (2) Tibet and Bhutan; *King's collector*!

IX.—ASSAM: (4) Khasia Hills; *Mann*, Nos. 397 and 1236! Shillong, 5,000 ft., *Prain*! *C. B. Clarke*, No. 17680 B! (6) Naga Hills; Kohima, 4,750 ft., *C. B. Clarke*, No. 41638! (7) Manipur; Mao to Kegnin, 6,000 ft., *Walt*, No. 685! !

X.—BURMA: (2) South Lushai Hills; 15 miles south-east of Fort Lungleh, 3,000 ft., *Gage*, No. 163! (3) Chin Hills; *Abdul Huk*! (5) Kachin Hills, *Shaik Mokim*! (6) Shan Hills; Maymyo Hill, 40 miles from Mandalay, *Badal Khan*, No 264! Fort Stedman, *Abdul Huk*! (12) Tenasserim; Martaban, *Kurz*, No. 515!

VAR. *Metziana*.

III.—PENINSULAR INDIA (4) Nilgiri Hills; *Schmidt*!

V.—BENGAL: (2) Chutia Nagpur; Parasnath, *T. Thomson*!

VI.—NORTH-WEST HIMALAYA. (13) Kistawar, Badrawar, 8,000 ft., *C. B. Clarke*, No. 31468B! (18) Chamba; Dalhousie, 5,000 ft., *C. B. Clarke*, No. 23184 B! (20) Simla, North-east of Simla, *Stoliczka*! (21) Garhwal; *King*! (22) Kumaon; Raniket, 6,000 ft., *Duthie*, No 4344 A!

VIII.—EASTERN HIMALAYA: (1) Sikkim; *T. Anderson*! *Kurz*! Top of Phalut, 10,000 ft., *T. Thomson*!

IX.—ASSAM (4) Khasia Hills; *Mann*, No. 627! Shillong, *Collett*! Madkadokadok, 5,000 ft., *C. B. Clarke*, Nos. 40411 A and 45367 A! Cherrapunji, 5,000 ft., *Gallatly*, No. 221!

VAR. *parviflora*.

VI.—NORTH-WEST HIMALAYA: (22) Kumaon; Naini Tal, 7,000 ft., *Strachey & Winterbottom*, No. 11!

VII.—NEPAL. *Wallich*, No 1700!

IX.—ASSAM (4) Khasia Hills; Dingling, 3,500 ft., *C. B. Clarke*, No 13078 A! Maolingkaden, 4,000 ft., *C. B. Clarke*, No 44810! Shillong, 5,500 ft., *C. B. Clarke*, No. 38850 A!

VAR *tenuicaulis*.

IX.—ASSAM: (4) Khasia Hills; *Mann*! Mairung, 5,000 ft., *C. B. Clarke*, No 16152! Maokadokadok, 5,500 ft., *C. B. Clarke*, No. 45371 B!

The varieties *arenaria* and *rigidula* are not represented in the Calcutta Herbarium. The writer has failed to recognise amongst the Calcutta sheets the var. *nepalensis* as distinct from *Polygonum alatum* proper. Of the list of sheets quoted under *Polygonum alatum*, only Duthie's No. 17511 from Mirga, Chitral, has trigonous nutlets; it differs in no other particular from the rest of the sheets.

49. *Polygonum microcephalum* Don

VII.—NEPAL: *Wallich*.

VIII.—EASTERN HIMALAYA (1) Sikkim and Darjeeling District; *King*, No. 24! Siroke, *T. Anderson*! *Kurz*! Tonglo,

T. Thomson! Punkabari, *Kurz*! Ryang, 4,000 ft, *C. B. Clarke*, No. 13645! *King*! Sittang, 3,000 ft, Sureil, 5,000 ft, *Gage*! (2) Bhutan; *Parkes*!

IX.—ASSAM: (4) Khasia Hills; 250-5,000 ft, *C. B. Clarke*, No. 5413! (6) Naga Hills; Chedama stream, 4-6,000 ft., *Prain*! Kohima, 3,000 ft., *Prain*! (8) Brahmaputra Valley; Sibsagar, *Masters*! (9) Sylhet, *Wallich*, No. 1704 E!

50. *Polygonum Wallichii* Meisn.

VII.—NEPAL: *Wallich*, No. 1702 A! *Scully*, No. 61!

51. *Polygonum sphærocephalum* Wall.

VI.—NORTH-WEST HIMALAYA: (18) Chamba; *Lace*, No. 1768! (21) Garhwal; ~~*Gattan*~~, No. 1982! Jaunsar, 8,500 ft., *Gamble*, Nos. 24868 and 26787! (22) Kumaon; Kathu, 7,800 ft, *Strachey & Winterbottom*, No. 10! Dhankiri, 8,000 ft., *Collett*! Forest above Shinkala, 9-10,000 ft, *Duthie*, No. 5931!

VII.—NEPAL: *Wallich*, No. 1703!

Distributed to CENTRAL CHINA. Hupeh; *Henry*, No. 6075! This sheet of Henry's has been identified, in the writer's opinion, wrongly by Forbes and Hemsley as *Polygonum runcinatum* Ham., from which it differs in the venation of the leaf, in the absence of any sign of runcination and in being non-auriculate.

52. *Polygonum runcinatum* Ham.

III.—PENINSULAR INDIA: (4) *Nilgiris, Ootacamund, 7,500 ft, *Gamble*, No. 12701! This is the same plant as is figured in Wight, *Icones Pl.* t. 1805.

VII.—NEPAL: *Wallich*, No. 1698!

VIII.—EASTERN HIMALAYA: (1) Sikkim; Darjeeling, 7,000 ft., *C. B. Clarke*, Nos. 8967 B and 12205 C! *Gamble*, No. 2687 B! Rungno and Little Rungeet Valleys, *Kurz*! Rungeet Valley, *T. Anderson*, No. 236! Old Lebong Road, *T. Thomson*! Sureil, 5,000 ft., *King*! Tukvar, *T. Thomson*! Phalut, 10,000 ft., *T. Thomson*! Tongloo, 8-10,000 ft., *T. Thomson*! *T. Anderson*, Nos. 1123 and 1132! *King*, No. 3094! *Gamble*, Nos. 2695 E., 9447, and 10435! Singalelah, 11,000 ft., *Gammie*, No. 76! (2) Tibet, *King's collector*!

IX.—ASSAM: (4) Khasia Hills; Mairung, 55,00 ft., *C. B. Clarke*, No. 40258 A! Cherra Plateau, 4,000 ft., *C. B. Clarke*, No. 5551! (6) Naga Hills; Kohima, 4,750 ft., *C. B. Clarke*, No. 41631!

53. *Polygonum sinuatum* Royle.

VI.—NORTH-WEST HIMALAYA: (15) Kunawar and Bashahr; *Vicary*! Harang, 10,000 ft., *Brandis*, No. 3554! (21) Garhwal; side of stream above Jalla, Ganges Valley, 10-11,000 ft., *Duthie*, No. 1984! (22) Kumaon; descent to Saba, 8,500 ft., and Ralum River, 9-10,000 ft., *Strachey & Winterbottom*, No. 40!

VIII.—* EASTERN HIMALAYA: (1) Sikkim; Lachung Valley, 10,000 ft., *Gammie*, No. 739!

54. *Polygonum capitatum* Ham.

V.—*BENGAL: (2) Chutia Nagpur; Manbhum, *Campbell*, Watt's No. 9474!

VI.—NORTH-WEST HIMALAYA: (15) Kunawar and Bashahr; Kandrard Gad, *Lace*, No. 872! (18) Chamba; Rakh to Chamba, 3-5,000 ft., *Lace*, No. 1772! Dalhousie, 5-7,000 ft., *Clark*, No. 133! *C. B. Clarke*, Nos. 22111 and 23149 B! (19) Kulu; Beas Valley from Bijaura to the base of the Rottang Pass, 4-6,500 ft., *Stoliczka*! (20) Simla; Sirmoor, *Vicary*! Simla, *Schlich*! Jheog, 7,000 ft., *Gamble*, No. 4367 B! Tara Devi, 6,500 ft., *Gamble*, No. 5642 B! (21) Garhwal; Landour, *Vicary*! Mussoorie, *King*! Near Dhunda in the Ganges Valley, 4-5,000 ft., *Duthie*, No. 202! Jumna Valley, Kharsali, 8-9,000 ft., *Duthie*, No. 535! (22) Kumaon; *Wallich*, 1699 B! Naini Tal and Almora, 5,500 ft., *Strachey & Winterbottom*, No. 8! Naini Tal, 7,000 ft., *Hume*!

VII.—NEPAL: *Maries*! *Scully*, No. 326!

VIII.—EASTERN HIMALAYA: (1) Darjeeling District and Sikkim; Darjeeling, 7,000 ft., *Kurs*! *T. Anderson*, No. 235! Sureil, 5,000 ft., *Gage*! Punkabari, *Kurs*! Lingdam, 4,000 ft., *C. B. Clarke*, No. 13084 C! Gorh, 3,500 ft., and Namdee, 10,000 ft., *King's collector*!

IX.—ASSAM: (2) Mishmi Hills; *Griffith*! (4) Khasia Hills; *Griffith*, No. 739! *Mann*, Nos. 532 and 578! Cherrapunji, *Gallatly*, No. 197! Cherra Plateau, 4,500 ft., *C. B. Clarke*, No. 5134! Borpani, 3,000 ft., *C. B.*

Clarke, No. 38196 A! Kullong, 5,800 ft., *C. B. Clarke*, No. 40010 B! Shillong, *Prain*! *Badal Khan*! (6) Naga Hills; Kohima, 4,750 ft., *C. B. Clarke*, No. 41700! *Prain*! Mongoemdi Road, *Watt*, No. 11810! (7) Manipur; *Watt*, No. 7407! Mao, 5,800 ft., *Watt*, No. 6129! (9) Sylhet, *Wallich*, No. 1699 C!

55. *Polygonum chinense* Linn.

IX.—ASSAM · (2) Mishmi Hills; *Griffith*! (6) Naga Hills; Kohima, *Prain*! Jaboca, *Prain's collector*, No. 135! (8) Brahmaputra Valley; Nowgong, *Simons*! (9) Sylhet and Cachar, *Wallich*, No. 1707 A! *Keenan*!

X.—BURMA · (1) Chittagong Hill Tracts; *King's collector*, Nos. 91, 153, 197, 243, 292, 626, 656! (6) Shan Hills; *Abdul Huk*! Bhamo; *J. Anderson*! (7) Pegu Yomah; *Kurs*, Nos. 521 and 2211! (11) Sittang Valley; Toukyeghat, *Kurs*, No. 521!

XI.—MALAY PENINSULA: Perak; *Scortechini*!

VAR. *scabra*.

IX.—ASSAM: (4) Khasia Hills; *Griffith*! (6) Naga Hills; Kohima, 4,750 ft., *C. B. Clarke*, No. 41615!

X.—BURMA: (5) Kachin Hills; *Pottinger*! (6) Shan Hills; Pewhla, *Praser*! Maymyo Hill, *King's collector*, Nos. 122, 164! (12) 'lenasserim; Faratoba, 2,500 ft., *Gallatly*, No. 175!

VAR. *ovalifolia*.

III —PENINSULAR INDIA: (1) Concan; Mahableshwar, *T. Cooke*! (4) Nilgiris, 6,500 ft., *Gamble*, No. 11728! Pykara, *King*! Ootacamund, *Schmidt*! *King*! (5) Travancore; High Range, *Ferguson*, Bourdillon's No. 7! (8) Carnatic; Shevaroi Hills; *Perottet*, No. 22! (9) Madura; Kodai-kanal, Pulney Hills. *Bourne*!

V.—BENGAL: (2) Chutia Nagpur; Parasnath, 4,200 ft., *C. B. Clarke*, No. 33730! *T. Thomson*! *Kurs*! Manbhum, *Campbell*, Watt's No. 8257!

VI.—NORTH-WEST HIMALAYA: (22) Kumaon; Durgara, and Naini Tal; *Strachey & Winterbottom*, No. 36!

VII.—NEPAL · *Maries*! *Wallich*, No. 1705 A!

VIII.—EASTERN HIMALAYA: (1) Sikkim and Darjeeling District; *King*, No. 963! Tonglo, 7,000 ft., *T. Thomson*! Yoksum, 4,500 ft., *T. Anderson*, No. 1151! Rungbee, *C. B.*

Clarke, No. 8678! (2) Tibet and Bhutan; *Parkes*! *King's collector*!

IX.—ASSAM: (4) Khasia Hills; *Griffith*! *Hooker & Thomson*! *Mann*! (7) Manipur; on the way to Singli, *Watt*, No. 6692!

X.—BURMA: (5) Kachin Hills; *Pottinger*! (7) Shan and Karen, Hills; Shway Koo, *J. Anderson*! Pwehla, 4,000 ft. *Collett*! Nantuphit Valley, 5,200 ft, *Gatacre*! Ruby Mines, *Abdul Huk*, No. 105! Makhaye Hill, and Madoe Hill, *King's collector*! Fort Stedman, *Abdul Huk*! Indine, Saga and Taungyi, *Abdul Khalil*! Natoung Mountains, *Cross*, Nos. 39 and 40! *Kurs*, No. 522!

X.—MALAY PENINSULA: *Kunstler*, No. 7968!

VAR. *subhastata*.

IX.—ASSAM: (7) Manipur; *Watt*, Nos. 5172 and 7406! (8) Brahmaputra Valley; Dibrugarh, *King's collector*, No. 37! Gauhati, *Gill*, No. 18! Teopora, *Watt*, No. 11131!

X.—BURMA: (2) Lushai Hills; Fort Lungleh, 3,000 ft., *Gage*, No. 52!

VAR. *brachiata*.

IX.—ASSAM: (1) Daphla Hills; Dikrung, 2,000 ft., *Lister*, No. 19! (2) Mishmi Hills; *Griffith*! (3) Garo Hills; *Mann*! (4) Khasia Hills; *Griffith*, No. 562! *Mann*, No. 599! (6) Naga Hills; Pherima, *Collett*! Tingali Bam, *Prain's collector*, No. 429! (9) Sylhet and Cachar; Lukhipur, Cachar, *C.B. Clarke*, No. 7029! Barak, Cachar, *Praser*!

VAR. *corymbosa*.

VI.—NORTH-WEST HIMALAYA: (20) Simla; Sirmoor, *Vicary*! *Gamble*, Nos. 4461 B and 5484 B! (21) Garhwal; Chakrata, 7,000 ft., *Gamble*, No. 26905! Ganges Valley, between Betwari and Danguha, 5-6,000 ft, *Duthie*, No. 1992! Lobah, 5-6,000 ft, *Duthie*, No. 4348! Nag Tiba, near Mussoorie, 9-10,000 ft, *Duthie*! Mussoorie, *King*! (22) Kumaon; Valley of the Gori, 7,000 ft, *Strachey & Winterbottom*, No. 364.

VII.—NEPAL: *Wallich*, 1706-1! *Scully*, No. 5!

VIII.—EASTERN HIMALAYA: *Hooker fil.*! *Kurs*! (1) Sikkim; Darjeeling, 7,000 ft., *Gamble*, No. 2710 B! Senchal, 8,000 ft., *T. Thomson*!

IX.—ASSAM: (4) Khasia Hills, *Kurs*! *Mann*, Nos. 283 and 344! (6) Naga Hills; Konoma, *Prain*!

The separating out of the varieties of this species is by no means easy, and in the writer's opinion too much reliance may be placed on the presence or absence of glands on the peduncles as varietal distinctions. It is not always possible to distinguish between a "hispidulous" peduncle and one from which the gland heads have dropped off the gland stalks, and in many apparently "hispidulous" peduncles the writer has detected a small proportion of glandular heads still remaining and showing the true character of the peduncle. The confusion which inattention to this resemblance between a truly hispidulous peduncle and one that is only apparently so may bring about, is well illustrated by a concrete example. *Strachey & Winterbottom's* No. 36 is represented in Calcutta Herbarium by two sheets, which are practically *fac-similes* of each other in every respect save one; this is that in one of the specimens the gland-heads are very apparent, in the other they have all fallen off. No. 36 is quoted by Meisner under his VAR. *Thunbergianum*, which he describes as eglandular hispidulous. He had seen a specimen on the peduncles of which only the gland-stalks had remained, and, misled by its hispidulous appearance, had placed it under *Thunbergianum*, whereas it is typical *ovalifolia*. The variety *scabra* includes both Meisner's *scabrum* and the variety *hispida* of the *Flora of British India*. Griffith's Khasia Hill specimen agrees precisely with Meisner's description of his variety *scabrum*, and between it and Gallatly's typically hispid specimens are all gradations.

56. **Polygonum Gilesii* Hemsley (Hook. *Icones Plant.*, vol. xviii, Pl. 1756).

Herb? everywhere glabrous; branches above filiform, at least three feet long. *Leaves* very few on the lower part of the stem, petioled, rather fleshy, cordate, about 5 in. broad. *Stipules* small, sc le-like. *Flowers* small, apparently white, very shortly pedicelled. *Perianth*-segments oblong, obtuse. *Stamens* 8, included. *Nut* smooth, exserted.

VI.—NORTH-WEST HIMALAYA: (1) Gilgit; *Giles*! (9) Chitral, 6,000 ft, *Harriss*, Duthie's No. 16577! Jambatai, 10,000 ft., *Duthie's*, No. 16576!

The description is taken from Hemsley in Hooker's *Icones Plantarum*, vol. xviii, Pl. 1756.

SECTION IX.—ECHINOCAULON Meisn.

57. *Polygonum muricatum* Meisn.

VII.—NEPAL: *Wallich*, No. 1724!

VIII.—EASTERN HIMALAYA: No specimen in the Calcutta Herbarium.

- IX.—ASSAM: (4) Khasia Hills; Cherra, 4,000 ft., *C. B. Clarke*, No. 7267! Surareen, 5,000 ft., *C. B. Clarke*, No. 40419 A! Shillong, 5,000 ft., *C. B. Clarke*, No. 40523 A! Sadoo, 5,500 ft., *C. B. Clarke*, No. 44869!

58. *Polygonum arifolium* Linn

- VIII.—EASTERN HIMALAYA. (1) Sikkim; Dikeeling, 5-7,000 ft., *C. B. Clarke*, Nos. 9640 B and C, and 9728 C!

- IX.—ASSAM: (4) Khasia Hills; *Hooker & Thomson*, No. 58! The writer can see no difference between this species, as exemplified by the above-quoted numbers, and Henry's Central China plant from Hupeh, No. 5080, *Polygonum senticosum* Meisn. of Forbes and Hemsley's enumeration.

59. *Polygonum perfoliatum* Linn.

- V.—BENGAL: (6) Central Bengal; Munshiganj, *C. B. Clarke*, No. 4727! Faridpur, *C. B. Clarke*, No. 7504!

- VI.—NORTH-WEST HIMALAYA: (22) Kumaon: Ramgunga Valley, 3,000 ft., *Duthie*, No. 3785!

- VII.—NEPAL. *Wallich*, No. 1696!

- VIII.—EASTERN HIMALAYA: (1) Sikkim and Darjeeling District; *Watt*, No. 5574! Rungno Valley, 5,000 ft., *T. Anderson*, No. 237! *Kurs*! Ryang Valley, *King*, No. 579! Mamring, 4,000 ft., *Gammie*!

- IX.—ASSAM: (4) Khasia Hills; *Hooker & Thomson*! *Mann*! (7) Manipur; *Watt*, No. 6828! (8) Brahmaputra Valley; *Masters*! (9) Sylhet; *Wallich*, No. 1696 B!

- X.—BURMA: (6) Shan Hills; Fort Stedman and Keng Taung, *King's collector*!

60. *Polygonum sagittatum* Linn.

- VI.—NORTH-WEST HIMALAYA: (22) Kumaon; Bhim Tal, 4-5,000 ft., *Duthie*, No. 4353!

- IX.—ASSAM: (4) Khasia Hills; Shillong, 5,000 ft., *C. B. Clarke*, No. 5759! Mansmon, 4,000 ft., *C. B. Clarke*, No. 16001! Maolingkaden, 4,000 ft., *C. B. Clarke*, No. 44814 A! (7) Manipur; Myang Khong Valley, *Watt*, No. 7149!

61. *Polygonum strigosum* R. Br.

- III.—PENINSULAR INDIA: (4) Nilgiris; *Schmidt*! *Gough*! Ootacamund, *King*! *Gamble*, No. 15377! Pykara, *Gamble*,

No. 12051! (9) Madura District; Kodaikanal Lake Pulney Hills, *Bourne*, No 696!

V.—BENGAL: (5) North Bengal, Siliguri, *Kurs!* Sukna, *Gamble*, 2964 B! Dalkajhar, 500 ft., *C. B. Clarke*, No. 3687! A! (6) Central Bengal; Faridpur, *C. B. Clarke*, No. 7488!

VI.—NORTH-WEST HIMALAYA: (22) Kumaon; Bhim Tal, 4,400 ft, *Strachey & Winterbottom*, No 7!

VII.—NEPAL: *Wallich*, No. 1697 A!

VIII.—EASTERN HIMALAYA: no specimens in Calcutta Herbarium.

IX.—ASSAM: (4) Khasia Hills; *Mann*, No. 347! Kalapani, 5,000 ft., *C. B. Clarke*, No 1903! B! (6) Naga Hills, Jolabusty, *Prain's collector*, No. 330! (9) Sylhet; *Wallich*, No. 1697 B! *C. B. Clarke*, 7133!

X.—BURMA: (1) Chittagong Hill Tracts; *King's collector*, Nos. 98 and 556! (3) Chin Hills; *Abdul Huk!* (6) Shan, Hills; Bhamo, *Abdul Huk!*

XI.—MALAY PENINSULA: Pulau Penang, *Wallich*, No. 1697 D!

62. *Polygonum prætermissum* Hook. f.

VIII.—*EASTERN HIMALAYA: *T. Thomson!* *Kurs!* *Gammie!*

IX.—ASSAM: (4) Khasia Hills; Maoplang, 5,500 ft., *C. B. Clarke*, No 18584 A!

All the specimens in the Calcutta Herbarium show glandular peduncles, although in some the glands have been almost entirely rubbed off, so that the peduncles appear on casual inspection as if glabrous.

63. **Polygonum birmanicum* sp. nov.

An annual herb with slender procumbent stem, faintly grooved and with angles slightly puberulous or glabrous; internodes about 3.5—6.5 cm. long. Lower *leaves* petioled, hastate, acute, upper *leaves* sessile amplexicaule, glabrous on both surfaces or faintly scabrid on the veins above and below; petiole 2—3.5 cm. long; lamina 2.5—6.5 cm. long, 8—2 cm. broad. *Stipules* small spathe-like, glabrous, eciliate, 4—8 mm. long. *Inflorescence* of about 3—6 slender simple axillary and branched terminal flaccid racemes, about 8.5—17 cm. long, each bearing about 6—12 distant bracts. *Bracts* tubular, glabrous, eciliate, unilaterally acuminate, 7 cm. long, with 2-4 flowers in the axil of each, exerted on pedicels 8 mm. long. *Flowers* small, about 4 mm. across or less. *Perianth*-segments 5, eglandular. *Stamens* 8, unequal. *Ovary* triquetrous, smooth; stigma trifid.

X.—BURMA: (6) Shan Hills; *King's collector*, No. 640! Fort Stedman, *King's collector*, No. 469! Indi, Keng Taung, Taungyi, Thamakhan in Southern Shan States, *King's collector*!

This is a quite distinct species near to *Polygonum prætermissum*, but distinguished therefrom by its much longer, quite glabrous and eglandular racemes.

64. *Polygonum pedunculare* Wall.

III.—PENINSULAR INDIA: (4) Nilgiris; Waterfield, *King*!

V.—BENGAL: (5) North Bengal; Dalkajhar, 500 ft., *C. B. Clarke*, No. 36798 C!

IX.—ASSAM: (6) Naga Hills; Jaboca, *Prain's collector*, No. 54! (8) Brahmaputra Valley; Orang, *Shaik Mokim*, No. 22! Dalgaon, *Shaik Mokim*, No. 336! Udulguri, Darrang District, *Chatterjee*!

XI.—MALAY PENINSULA: *Kunstler*, No. 2498! Singapore, *Wallich*, No. 1718! Malacca, *Griffith*! Johore, *Ridley*, No. 4220! Perak, *Ridley*, No. 2965! *Wray*, No. 1888! Pahang, *Ridley*, No. 1616! Selangor, *Ridley*, No. 8175!

VAR. *angustissima*.

III.—PENINSULAR INDIA; *Wight*, K. D., No. 2460!

V.—*BENGAL: (2) Chutia Nagpur; Bokaro River, *Prain*!

VAR. *nilagirica*.

III.—PENINSULAR INDIA: (2) North Canara; Supa, *Talbot*, No. 1383! (4) Nilgiris; Coonoor, 6,000 ft., *C. B. Clarke*, No. 10810 C and D! (9) Madura; Poombai, Pulney Hills, *Bourne*, No. 1151 in part!

VAR. *assamica*.

IX.—ASSAM: (4) Khasia Hills; *Mann*, No. 421! (8) Bramahputra Valley; Lakhimpur, *Masters*!

VAR. *glabrata*.

IX.—ASSAM: (9) Sylhet; *Wallich*, No. 6285!

SECTION X.—ACONOGON Meisn.

65. *Polygonum alpinum* All.

VI.—NORTH-WEST HIMALAYA: (1) Gilgit; *Giles*, No. 117! (2) Baltistan; Teing, Astor, and Goodeh, *Strachey & Winterbottom*, No. 698! (9) Chitral; *Younghusband*! (11) Hazara; Kagan Valley, *Inayat*, Duthie's No. 20123!

- (12) Kashmir; Kajnag Range, 9-10,000 ft., *Duthie*, Nos. 10941 and 11086! Kanni Valley, 9-11,000 ft., *Duthie*, Nos. 12514 and 12521! Tragbol, 8,500 ft., *C. B. Clarke*, No. 29210 C! Drawa Pass, *Strachey & Winterbottom*, No. 434! Gulmarg, *Duthie*! (14) Lahul; Below Kolang, Bhaga Valley, 11,000 ft., *Holland*! (15) Kunawar; Pangi, *Herb. Kurs.*, No. 3978!

66. *Polygonum paniculatum* Blume.

- VI.—NORTH-WEST HIMALAYA, *Wallich*, No. 1686!
 VII.—NEPAL: No specimens in the Calcutta Herbarium.
 VIII.—EASTERN HIMALAYA: (1) Sikkim, *Hooker! Kurs! King!* Tonglo, 8-10,000 ft., *Thomson! Gamble*, No. 8418!
 IX.—*ASSAM: (6) Naga Hills; Konoma, *Prain*!

The Wallichian sheet in the Calcutta Herbarium is misnamed *Polygonum polystachyum*.

67. *Polygonum rude* Meisn.

- IX.—ASSAM: (4) Khasia Hills; *Griffith*, No. 418! Mairung, 5,500 ft., *C. B. Clarke*, No. 40259 A! Maolingkaden, 4,000 ft., *C. B. Clarke*, No. 44817 A! *Mann*, No. 375! Nunklow, *Simons*, No. 449!
 X.—*BURMA: (3) Chin Hills; *King's collector*! (5) Kachin Hills; *Prain's collector*! (6) Shan and Karen Hills; Natoung Hills, 7,000 ft., *Kurs*, No. 518!

68. *Polygonum molle* Don.

- VI.—NORTH-WEST HIMALAYA: (5) Kunawar and Bashahr; Chini, *Stewart*, *Brandis*, No. 2883!
 VII.—NEPAL: *Wallich*, No. 1685 in part! *Hamilton! Scully*, No. 268!
 VIII.—EASTERN HIMALAYA: (1) Sikkim and Darjeeling District. Mons Lepcha, old Lebong Road, *T. Thomson*! Rungno Valley, 4,000 ft., *Kurs! T. Anderson*, No. 238! Senchal, 8,000 ft., *T. Anderson*, Nos. 1137 and 1149! Darjeeling, *T. Anderson*, No. 1136! Rungbee, 6,000 ft., *C. B. Clarke*, Nos. 8549 and 12449! Lachung Valley, 9,000 ft., *Gammie*! (2) Bhutan; *Parkes*!

69. *Polygonum frondosum* Meisn.

- VI.—NORTH-WEST HIMALAYA: (19) Kangra; Dharmsala, *Edgeworth*! (22) Kumaon; below Paton, 5,600 ft., and Hurdole Pass, *Strachey & Winterbottom*, No. 34!

This species is exceedingly like *Polygonum paniculatum* Bl., from which in the dry state it can only be distinguished by the glabrous margins of its leaves.

70. *Polygonum polystachyum* Wall.

VI.—NORTH-WEST HIMALAYA: (11) Hazara; Kagan Valley, 14,400 ft., *Inayat*, Duthie's No. 20124! (12) Kashmir; Marbal Pass, *Stoliczka*! (13) Kistawar; 5-8,000 ft., *Stoliczka*! (14) Lahul; *Faeschke*! (15) Kunawar and Bashahr; Asrang, 11,000 ft., *Lace*, No. 395! Pangi, *Stoliczka*! (18) Chamba; Dalhousie, *Clark*, No. 144! *Grant*! (19) Kangra; Laka, 11,000 ft., *C. B. Clarke*, No. 24541 A and B! (20) Simla, Nagkanda, 9,000 ft., *Gamble*, No. 6567 B! Sirmoor, *Vicary*! (21) Garhwal; *Strachey & Winterbottom*, No. 32! Below Kidarkanta, near Oura, 6-7,000 ft., *Duthie*, No. 1224! (22) Kumaon; *Wallich*, No. 1686-1! Saba to Ralum, 9-12,000 ft., *Strachey & Winterbottom*, No. 33!

VIII.—EASTERN HIMALAYA: (1) Sikkim, Darjeeling, *Gamble*, No. 2718 C! Phalut, 11,000 ft., *T. Thomson*! Phullalong, 10,000 ft., *C. B. Clarke*, No. 13399 C and E! Jongri, 13-15,000 ft., *T. Anderson*, No. 1120! *C. B. Clarke*, No. 25814 J! *King's collector*! Nathu-la, Chola range, 14,000 ft., Tankra, 13,000 ft., *Gammie*, No. 382!

All the above-quoted specimens are more or less pubescent, but are unworthy of varietal separation on that account.

VAR. *crispata*.

VI.—NORTH-WEST HIMALAYA: Upper Chenab; *Ellis*, No. 646!

71. *Polygonum rumicifolium* Royle.

I.—NORTH-WEST FRONTIER: (1) Afghan border; *Griffith*, 1,040 and K. D. No. 4127! Kurram Valley, *Aitchison*, No. 794!

VI.—NORTH-WEST HIMALAYA: (1) Gilgit, Kala-pani, 10,500 ft., *Giles*, No. 153! (9) Chitral; Ziarat, 7,200 ft., *Harriss*, Duthie's No. 16579! Mirga, 9,200 ft., *Gatacre*, Duthie's No. 17508! (11) Hazara; Siran Valley, *Inayat*, Duthie's No. 20112! (12) Kashmir; Burzil Valley, *Strachey & Winterbottom*, No. 604! Near Das Kurrim, *Strachey & Winterbottom*, No. 896! Above Kainmul, Liddar Valley, 11-12,000 ft., *Duthie*, No. 13135! (14) Lahul; *Hay*! *Faeschke*! (15) Kunawar; *Vicary*! (21) Garhwal;

above Jhala, in the Ganges Valley, 12-13,000 ft., *Duthie*, No. 200 (a) ! Taulea under Srikanta, 12,000 ft., *Duthie* No. 548 ! (22) Kumaon ; near Ralum, 11,500 ft., *Strachey & Winterbottom*, No. 42 !

VII.—NEPAL : opposite Budhi village, Western Nepal, 10-11,000 ft., *Duthie* No. 5930 !

Amongst the above sheets, specimens with retrorsely hairy stems and somewhat smaller leaves are fairly frequent.

72. *Polygonum campanulatum* Hook. f.

VI.—NORTH-WEST HIMALAYA : (22) Kumaon ; Jhuni, 7,500 ft., *Strachey & Winterbottom*, No. 35 !

VIII — EASTERN HIMALAYA : (1) Sikkim ; Tonglo, 10,000 ft., *King ! Gamble*, No. 2701 B and C ! Singalelah, 11,000 ft., *Gammie*, No. 82 ! Phullalong, 9-10,000 ft., *C. B. Clarke*, Nos. 12587 B and 13482 B, C, F ! Jongri, 13-15,000 ft., *T. Anderson*, No. 1154 ! Gyree Basha, 12,000 ft., *King's collector !* Lachung Valley, 9,000 ft., *Gammie*, Nos. 657 and 1106 ! Tankra, *Gammie*, No. 489 !

VAR. *fulvida*.

VII.—NEPAL : Thari, 12,000 ft., *King's collector !*

VIII.—EASTERN HIMALAYA : (1) Sikkim ; Phalut, 10,000 ft., *T. Thomson !* Tongloo, 8-11,000 ft., *T. Thomson ! T. Anderson*, Nos. 1122 and 1124 ! *King ! C. B. Clarke*, No. 27506 E and G ! *Gamble*, Nos. 757 and 1602 C ! Jongri, *King's collector !* Thangme, 14,000 ft., *King's collector !* Lachung Valley, 11,000 ft., *Gammie*, No. 752 ! (2) Tibet and Bhutan, *King's collector*, No. 445 ! Pheemong, near Chumbi, *King's collector !* Kunboo, Chumbi, *King's collector*, No. 135 !

The varieties *membranifolia* and *longipes* have not been separated out by the writer.

73. *Polygonum tortuosum* Don.

VI.—NORTH-WEST HIMALAYA : (2) Baltistan ; *Strachey & Winterbottom*, No. 649 ! (4) Dras ; Marpu Nullah, above Dras, 11-12,000 ft., *Duthie*, No. 11774 ! Kargil, *Stoliczka !* (7) Rupchu ; 15-18,000 ft., *Stoliczka !* (12) Kashmir ; Suru, *Stoliczka !* Gudhai Valley, 11-12,000 ft., *Duthie*, No. 12195 ! Kashmir Valley, *Hunter-Weston*, *Duthie's* No. 10274 ! (15) Kunawar and Bashahr, *Vicary !* Harang, 11,500 ft., *Brandis*, No. 3557 !

13,000 ft., *Lace*, No. 542! (21) Garhwal; Rhudghera-ka Godh, 11-14,000 ft., *Duthie*, No. 199! Gangotri, 12-13,000 ft., *Duthie*, No. 1980! (22) Kumaon, Kulti Valley, 14-15,000 ft., *Duthie*, No. 592!

This species has also been found by Lama Ujyen Gyatsko, Nos. 77 and 271, the precise locality unknown, but probably within Tibetan territory to the north of Sikkim.

VAR. *spicata*.

VI.—NORTH-WEST HIMALAYA: *T. Thomson*! *Stoliczka*! (2) Baltistan; Chatpani Nullah, 10-11,000 ft., *Duthie*, No. 13808!

74. *Polygonum sibiricum* Laxm.

VI.—NORTH-WEST HIMALAYA: *T. Thomson*, Nos. 36 and 37! *Hay*! *Stewart*! (1) Gilgit; *Giles*! (7) Rupchu, 15-18,000 ft., *Stoliczka*!

VIII.—EASTERN HIMALAYA: (2) Tibet; *Lama Ujyen Gyatsko*, No. 124! *Fhari*, *King's collector*!

75. *Polygonum Hookeri* Meisn. (*Ann. Sci. Nat.*, ser. 5, vol. vi, p. 352). *Polygonum acaule Hook f.*, not of *Boissier*.

VIII.—EASTERN HIMALAYA: (1) Sikkim; *Hooker*, No. 70! Ghora-la, 16,500 ft., *Gammie*, No. 823!

76. *Polygonum nummularifolium* Meisn.

VI.—NORTH-WEST HIMALAYA: (12) Kashmir; Sangam Valley, *Duthie*, No. 13553! (21) Garhwal; Pilkanta, 13-14,000 ft., *Duthie*, No. 4362! (22) Kumaon; Barji Kang Pass, 14,500 ft., *Strachey & Winterbottom*, No. 43!

VIII.—EASTERN HIMALAYA: (1) Sikkim; *Hooker*! Tankra-la, 16,000 ft., and Kang-la, 15,000 ft., *Gammie*, No. 505! Momay Samdong, Lachung Valley, 17,000 ft., *Gammie*, No. 861!

SECTION XI.—TINIARIA Meisn.

77. *Polygonum Convolvulus* Linn.

I.—NORTH-WEST FRONTIER: (1) Afghan border; Kurram Valley, *Aitchison*, No. 657!

VI.—NORTH-WEST HIMALAYA: (6) Zanskar; east of the Pensi-la *Stoliczka*! (15) Kunawar; Pangi (?) *Stoliczka*!

VIII.—*EASTERN HIMALAYA: (1) Sikkim; King, No. 4004! (2) Tibet; Chumbi, *King's collector*! Le-ra-ong, *King's collector*!

78. *Polygonum dumetorum* Linn.

I.—NORTH-WEST FRONTIER: (1) Afghan border; Kurram Valley, *Aitchison*!

VI.—NORTH-WEST HIMALAYA: (9) Chitral and Dir; Dir, 6,500 ft., *Harriss*, Duthie's No. 16583! Dir Valley, 4,200 ft., *Gatacre*, Duthie's No. 17513! Near Drosh, *Hamilton*, Duthie's No. 17916! (11) Hazara, Kagan Valley, *Inayat*, Duthie's No. 20127! (12) Kashmir, Sonamurg, 10,000 ft., *C. B. Clarke*, No. 30834 A! Near Gurais, 8,000 ft., *Duthie*, No. 14,000! Gandesbal, 5,500 ft., *Gammie*! (13) Kistawar; 5-8,000 ft., *Stoliczka*! (15) Kunawar and Bashhar; Pangī, *Stoliczka*! Chini, *Munro*! *Brandis*; No. 2739! (18) Chamba; Chamba, 3,000 ft. *C. B. Clarke*, No. 23772 B! *Herb. Kurr*, No. 4273! Dalhousie, 4,500 to 7,000 ft., *Grant*! *C. B. Clarke*, No. 23145 D and E! Alwas to Baira, 6-8,000 ft., *Lace*, No. 1866! (20) Simla; *Gamble*, No. 4832 D!

79. *Polygonum pterocarpum* Wall.

VI.—NORTH-WEST HIMALAYA: *Royle*! (22) Kumaon; *Wallich*, No. 1690!

VIII.—EASTERN HIMALAYA: (1) Sikkim; Darjeeling; 6,000 ft., *King*! *Gamble*, Nos. 130 B, 2682 A, 8521! Hee, 4,000 ft., *C. B. Clarke*, No. 13427 A and E! Lingdam, 4,000 ft., *C. B. Clarke*, No. 13051 C! Yaksum, 4,500 ft., *T. Anderson*, No. 1156! Lachung Valley, 7,000 ft., *Gammie*, No. 1192!

PART II.—ARTIFICIAL KEY.

The key for the most part explains itself, but it may be as well to state explicitly what the writer means by certain terms. Under the term 'axillary' the writer includes even capitula-like clusters, so long as they are in the axils of *unmodified* leaves, whether confined to the apical portion of the stem and branches or not. Thus *Polygonum delicatulum* has capitula-like clusters, but they are distinctly in the axils of unmodified leaves, and consequently are classed as axillary. Under the term 'head' the writer includes all more or less globose clusters—whether they are 'capitula' in the rigid botanical sense or not—which are not in the axils of unmodified leaves, but which may be in the axils of

bracts, as is seen in *Polygonum alatum*. Two plants at least, *Polygonum Hookeri* and *Polygonum plebejum* var. *effusa*, have had to be entered twice, as the former may be picked up with a spicate or with a paniculate inflorescence, and the latter with short leaves or long and slender leaves

I.—TWINING PLANTS.

- * Fruit not winged *P. Convolvulus*.
- ** Fruit winged
 - Wings very little if at all prolonged down the pedicel *P. dumetorum*.
 - Wings prolonged down to the base of the pedicel *P. pterocarpum*.

II.—NON-TWINING PLANTS.

A. Inflorescence axillary.

- * Leaf lamina, elliptic, ovate or orbicular, length not more than four times the breadth, usually much less
 - † Stipules with two distinct excurrent nerves
 - The excurrent nerves spinescent and leaves mucronulate *P. biaristatum*.
 - The excurrent nerves not spinescent and leaves not mucronulate *P. recumbens*.
 - †† Stipules without excurrent nerves
 - § Leaves hirsute *P. filicaule*.
 - §§ Leaves glabrous
 - × Plants tufted delicate annuals with very minute flowers, bipartite stipules and non-tubular bracts
 - Leaves opposite *P. islandicum*.
 - Leaves alternate *P. delicatulum*.
 - × × Plants not tufted but prostrate or ascending with fair-sized flowers, with tubular bracts and tubular stipules, which latter may be slightly or much lacerate

-
- Flowers pedicels long, exserted
well beyond the stipules . *P. plebejum*
VAR. *effusa*.
 - Flowers sessile or pedicels quite
short and very little if at all
exserted beyond the stipules
 - △ Stipules many-nerved
Nut polished, smooth *P. plebejum*
VAR. *polyneura*.
 - Nut dull, striolate . *P. aviculare*.
 - △△ Stipules nerveless or
showing only one or
two nerves
 - || Leaf lamina
broadly elliptic,
rather large,
1-1.5 cm. long
by .5-1 cm.
broad, shortly
petioled . *P. cognatum*.
 - ||| Lamina orbicular
or oblong, very
small, usually
not more than 4
mm. in diame-
ter, sessile
Branches very
numerous;
leaves orbi-
cular, apicu-
late with a
distinct me-
dian ridge;
stipules very
crinite and
woolly look-
ing . *P. plebejum*
VAR. *Griffithii*.
 - Branches not
very numer-
ous; leaves
oblong; sti-

-
- pules fimbriate not woolly
Flowers and nutlets of average size *P. plebejum*
VARs. *indica* and *brevifolia*.
- Flowers and nutlets very minute *P. plebejum*
VAR. *micranthema*.
- ** Leaf lamina linear or subulate, length more than four times the breadth, usually a good deal more
- † Internodes, especially upper ones, almost or quite hidden by the very prominent white hyaline stipules which also considerably overlap the leaves
- § Plant very dwarf, 2.5-5 cm., and of thread-like slenderness *P. molliaforme*.
- §§ Plant always at least over 10 cm., with stoutish branches, as thick as the lead of a pencil or thicker
- Root slender, annual *P. tubulosum*.
- Root-stock very stout and woody *P. paronychioides*.
- †† Stipules confined to the base of the internodes, leaving the greater part ($\frac{1}{4}$ — $\frac{1}{2}$) of each internode uncovered
- § Branches erect and rigid or erect and flexuous or erect and geniculate
- × Leaves comparatively large, 2-4.5 cm. long and .4-.6 cm. broad, narrowly lancolate with lateral nerves coming off at an acute angle from the midrib *P. setosum*.
- × × Leaves minute, never more than 1 cm. long, linear, subulate; no lateral nerves

- Leaf-apex with a distinct
hyaline mucro. *P. afghanicum.*
- Leaf-apex without a
mucro. *P. salicornioides.*
- §§ Branches prostrate
- Stipules very white, almost entire. Internodes very smooth, angled but not grooved. Leaves very small subulate, fleshy, mucronulate *P. polycnemoides.*
- Stipules brownish, fimbriate. Internodes grooved. Leaves up to 2 cm. long, linear or narrowly lanceolate, flat, not mucronulate *P. plebejum* and its variety *elegans.*
- Flowers exerted on long pedicels *P. plebejum*
VAR. *effusa.*
- B. Inflorescence of sessile or pedicelled flowers closely set on unbranched spikes or spiciform racemes.**
- * Leaves all sessile or only very shortly petioled
- † Laminæ orbicular, broadly elliptic or oblong
- Plant dwarf, not creeping, leaves all radical and very hairy *P. Hookeri.*
- Plant not dwarf, creeping, leaves cauline and glabrous *P. vaccinifolium.*
- †† Laminæ linear or linear-lanceolate
- Racemes many-flowered, from 60 upwards *P. affine.*
- Racemes few-flowered, rarely as many as 20 *P. Emodi.*
- ** All or at least the lower leaves long-petioled
- † Leaves ovate-cordate, upper ones amplexicaul
- Petiole winged above *P. Bistorta.*
- Petiole not winged *P. amplexicaule.*
- †† Leaves lanceolate or linear lanceolate not amplexicaul
- § Lower part of inflorescence bulbiferous *P. viviparum.*

§§ Inflorescence not bulbiliferous

× Leaf-margins smooth. Leaves usually floating . . . P. amphibium.

× × Leaf margin crenulated with marginal veinlets. Leaves not floating
Lamina abruptly or acutely continuous with petiole . . . P. sphærostachyum.
Lamina very gradually continuous with petiole . . . P. paleaceum.

C. *Inflorescence of sessile or pedicelled flowers, closely set or distant on branched short stout, or long slender spikes or spiciform racemes.*

* Plants more or less beset with recurved prickles which are often restricted to the base of stipules

† Stipules orbicular foliaceous. Leaves peltate-deltoid ; very long-petioled . . . P. perfoliatum.

†† Stipules tubular membranous. Leaves linear or linear-oblong, ovate or oblong-ovate, or linear-sagittate, or hastate; shortly petioled

§ Racemes slender, 2·5 cm. or more in length. Bracts distant. Leaves linear-sagittate or hastate P. prætermissum.

§§ Racemes very short, 5-1 cm long. Bracts crowded. Leaves ovate or oblong-ovate or linear-oblong

× Leaves linear or linear-oblong, margin and midrib closely beset with strong recurved prickles . . . P. strigosum.

× × Leaves ovate or oblong-ovate. Prickles absent from margin, and midrib, or only very feebly developed . . . P. muricatum.

** Plants unarmed

† Racemes stout, compact. Bracts closely imbricating

§ Nut orbicular or bi-convex,

-
- × Peduncles scurfily glandular
 - Leaves without canescence beneath *P. lapathifolium.*
 - Leaves canescent beneath *P. lapathifolium*
 - SUB-SP. *maculatum.*
 - × × Peduncles eglandular and either glabrous or hairy
 - Stipules and bracts eciliate
 - Plant glabrous *P. glabrum.*
 - Plant covered with a cottony tomentum *P. lanigerum.*
 - Stipules and bracts ciliate
 - △ Leaves long-petioled *P. orientale.*
 - △△ Leaves short petioled or sessile.
 - || Peduncles strigosely hairy
 - Stipules with a spreading or recurved scabrid limb *P. limbatum.*
 - Stipules without a limb *P. tomentosum.*
 - ||| Peduncles glabrous
 - Spikes oblong-cylindrical.
 - Nut not less than 3 mm. long *P. Persicaria.*
 - Spikes narrowly cylindrical.
 - Nut not more than 1.5 mm. long *P. minus,*
 - §§ Nut trigonous
 - × Branches and peduncles glandular and hairy *P. viscosum.*
 - × × Branches and peduncles hairy or glabrous but never glandular
 - Bracts and perianth finely glandular *P. macranthum.*

- Bracts and perianth eglandular
- △ Bracts more or less hairy P. stagninum.
- △△ Bracts quite glabrous
Leaf-bases acute or acuminate . . . P. barbatum.
Leaf-bases obtuse or slightly cordate . P. serrulatum.
- †† Racemes slender, loose. Bracts more or less interrupted
- § Perianth glandular
- Raceme long-interrupted. Stipular cilia at least half as long as the tube or longer. Leaves glabrous or very sparingly hairy P. flaccidum.
Leaves hispidly hairy at least beneath P. flaccidum VAR. hispida.
- Raceme short-interrupted. Stipular cilia quite short or absent P. Hydropiper.
Whole plant minutely glandular P. Hydropiper VAR. glandulosissima.
- §§ Perianth eglandular
- × Stipules and bracts entire or only slightly fimbriate; never ciliate
Leaves sagittate or hastate.
Racemes flaccid P. birmanicum.
Leaves elliptic-lanceolate.
Racemes rather strict . . . P. Bellardi.
- × × Stipules and bracts ciliate.
- Nut bi-convex.
Styles hooked P. virginianum.
Styles not hooked . . . P. assamicum.
- Nut trigonous.
Nut sharply trigonous, perfectly smooth and polished P. Posumbu.
Nut obtusely trigonous, finely punctulate . . . P. mite.

D. Inflorescence of small more or less globose or obpyramidal heads.

* Plants dwarf, not exceeding 15 cm. in height, often tufted

† Leaves orbicular *P. nummulari-folium.*

†† Leaves linear.

Leaves flat with two basal auricles . . . *P. sibiricum.*

Leaf margins recurved, and wanting basal auricles *P. perpusillum.*

††† Leaves neither orbicular, nor linear

§ Heads in the axil of an involucreal leaf *P. alatum*
VAR. *rigidula.*

§§ Heads without an involucreal leaf

Leaves sessile. Nut bi-convex *P. humile.*

Leaves long-petioled. Nut trigonous *P. glaciale.*

** Plants not dwarf and never tufted.

† Plants armed more or less with recurved prickles, which may be reduced to a few at the base of the stipules

§ Peduncles glabrous *P. sagittatum.*

§§ Peduncles glandular

× Leaves broadly hastate-acuminate, long-petioled. Nut trigonous *P. arifolium.*

× × Leaves elliptic-oblong or linear-oblong, short-petioled. Nut orbicular bi-convex

○ Peduncles sparingly branched, with medium-sized heads
Leaves elliptic-lanceolate or ovate, acuminate at both ends *P. pedunculare.*

Leaves oblong or oblong-lanceolate, 1.9-2.5 cm. broad *P. pedunculare*
VAR. *nilagirica.*

Leaves linear lanceolate, very narrow, .6-.8 cm. broad *P. pedunculare*
VAR. *angustissima.*

- Peduncles exceedingly slender branching freely and dichotomously and ending in very small heads . . . P. pedunculare
VAR. assamica.
- †† Plants unarmed
- § Capitula at the apex of exceedingly long, slender, erect, and rodlike stems, with very distant nodes, entirely naked or showing only one or two small feebly developed leaves on the lowest nodes. Stipules scale-like . . . P. Gilesii.
- §§ Capitula on distinct solitary or branched peduncles arising from ordinary leafy branches. Stipules tubular
- × Leaves pinnatifidily lobed
- Leaves coarsely lobed. Peduncles glandular-hairy . . . P. runcinatum.
- Leaves finely cut. Peduncles glabrous . . . P. sinuatum.
- × × Leaves entire
- Peduncles quite glabrous
- Petiole winged; non-auriculate . . . P. microcephalum.
- Petiole auriculate, not winged . . . P. Wallichii.
- Peduncles glandular-hairy or hispidulous, at least near the heads
- △ Every or almost every head in the axil of an involucral leaf . . . P. alatum.
- △ △ Heads not in the axils of involucral leaves
- || Main peduncles ending in a single capitulum or dividing into only 2-4 unicapitate branches

-
- ◇ Plant a tall erect shrub . . . *P. chinense*
VAR. *corymbosa*.
 - ◇◇ Plant creeping or, if erect, small and herbaceous
 - ▽ Petiole broadly winged to the base
Leaves large, 10-12 cm. long from base of petiole to apex of lamina.
Bracts not showing dots *P. sphærocephalum*
VAR. *Wightiana*.
 - Leaves small, not more than 4 cm. long including petiole.
Bracts showing one or more white dots . . . *P. alatum*
VAR. *parviflora*.
 - ▽▽ Petiole, if present, not winged or only very slightly at the top.
Leaves subsessile, auriculate . . . *P. capitatum*.
 - Leaves long-petioled, non-auriculate . . . *P. sphærocephalum*.

||| Main-peduncles panicu-
lately branched with
numerous heads

◇ Plant a small
diffusely branch-
ed herb, very
slender and
small leaved . P. alatum
VAR. tenuicaulis.

◇◇ Plant a shrub,
with large leaves
▽ Leaves scabridly
hairy on both
surfaces . P. chinense
VAR. scabra.

▽▽ Leaves glabrous
or almost so
Leaves very
broadly oval P. chinense
VAR. ovalifolia.

Leaves broadly
lanceolate . P. chinense.

E. Inflorescence paniculate.

* Plant dwarf, unbranched, with only radical
leaves P. Hookeri.

** Plants shrubby and much branched, with
cauline leaves

† Flowers very small not more than 4
mm. in diameter

§ Plants glabrous .
Leaf-margins ciliolate . . . P. paniculatum.
Leaf-margins smooth . . . P. frondosum.

§§ Plants strigosely hairy, often with
the hairs on the branches re-
trorse P. rude.

§§§ Plants more or less pubescent
Perianth baccate in fruit . . . P. molle.
Perianth not baccate . . . P. alpinum.

†† Flowers large, not less than 6 mm. in
diameter

§ Perianth campanulate
Plant a low shrub with sessile
leaves and dense-flowered
panicle P. tortuosum.

- Plant a shrub of 2-4 ft. high with
petioled leaves and lax divari-
cate cymes *P. campanulatum*.
Leaves with a dense fulvous to-
mentum on the lower surface *P. campanulatum*
VAR. *fulvida*.

§§ Perianth widely spreading

- Tall shrub 3-6 feet high, with
large spreading terminal pani-
cles *P. polystachyum*.
Herbaceous plant not more than
1½ feet high, with small dense
panicles axillary as well as ter-
minal *P. rumicifolium*.

PART III.—DISTRIBUTION.

General latitudinal distribution of the Indian species.

In the following diagram the intra-Indian distribution to the various sub-sub-areas is given in black, the extra-Indian distribution in squares which are shaded diagonally when the species is indigenous, horizontally when the species is known to be introduced.

The diagram is followed by an analytical table of the extra-Indian distribution of the non-endemic species, after which is given a table of the intra-Indian distribution of the endemic species.

Indian Sub-sub-areas.

	Indian Sub-sub-areas.										
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI
	N.W. Frontier.	Central Provinces.	Penins. India.	Upper Gangetic Plain.	Bengal.	N.-W. Himalaya.	Nepal.	East Himalaya.	Assam.	Burma.	Malay Penin.
	S. America.	N. America.	Africa.	Europe.	North and Central Asia.	West Asia.					
1. <i>P. islandicum</i>											
2. <i>P. delicatulum</i>											
3. <i>P. filicaule</i>											
4. <i>P. biaristatum</i>											
5. <i>P. recumbens</i>											
6. <i>P. cognatum</i>											
7. <i>P. paronychioides</i>											
8. <i>P. salicornioides</i>											
9. <i>P. aviculare</i>											
10. <i>P. Bellardi</i>											
11. <i>P. setosum</i>											
12. <i>P. tubulosum</i>											
13. <i>P. polycnemoides</i>											
14. <i>P. afghanicum</i>											
15. <i>P. mollisforme</i>											
16. <i>P. plebejum</i>											
<i>var. effusa</i>											
<i>var. elegans</i>											
<i>var. indica</i>											
<i>var. brevifolia</i>											
<i>var. micranthema</i>											
<i>var. Griffithii</i>											
<i>var. polyneura</i>											
17. <i>P. orientale</i>											
18. <i>P. tomentosum</i>											
19. <i>P. limbatum</i>											
20. <i>P. virginianum</i>											
21. <i>P. viviparum</i>											
22. <i>P. sphaerostachyum</i>											
23. <i>P. perpusillum</i>											
24. <i>P. paleaceum</i>											
25. <i>P. Bistorta</i>											
26. <i>P. simplexicaule</i>											
<i>var. speciosa</i>											
27. <i>P. affine</i>											
28. <i>P. vacantholium</i>											
29. <i>P. lanodi</i>											

Sect. I.
Koenigia.
Sect. II.
Eleuthero-
rosperma.

Sect. III.
Avicu-
laria.

Sect. IV.
Ambly-
gonon.
Sect. V.
Tovora.

Sect. VI.
Distichlis.

Indian Sub-sub-areas.																		
<div><div>I</div><div>II</div><div>III</div><div>IV</div><div>V</div><div>VI</div><div>VII</div><div>VIII</div><div>IX</div><div>X</div><div>XI</div></div>																		
S. America.	N America.	Africa.	Europe	North and Central Asia.	West Asia.	N -W. Frontier	Central Provinces.	Penins. India.	Upper Gangetic Plain.	Bengal.	N -W Himalaya.	Nepal.	East Himalaya.	Assam	Burma	Malaya Penins.	China.	Australasia.
30. <i>P. glabrum</i> .																		
31. <i>P. amphibium</i> .																		
32. <i>P. lanigerum</i> .																		
33. <i>P. lapathifolium</i> .																		
sub-sp. <i>maculatum</i>																		
34. <i>P. Persicaria</i> .																		
35. <i>P. minus</i> .																		
36. <i>P. assamicum</i> .																		
37. <i>P. viscosum</i> .																		
38. <i>P. stagninum</i> .																		
39. <i>P. barbatum</i> .																		
40. <i>P. serrulatum</i> .																		
41. <i>P. Posumbu</i> .																		
42. <i>P. mite</i> .																		
43. <i>P. Hydropiper</i> .																		
var. <i>glandulosissima</i>																		
44. <i>P. flaccidum</i> .																		
var. <i>hispida</i> .																		
45. <i>P. macranthum</i> .																		
46. <i>P. humile</i> .																		
47. <i>P. glaciale</i> .																		
48. <i>P. alatum</i> .																		
var. <i>parviflora</i> .																		
var. <i>Metziana</i> .																		
var. <i>tenuicaulis</i> .																		
49. <i>P. microcephalum</i>																		
50. <i>P. Wallichii</i> .																		
51. <i>P. sphaerocephalum</i> .																		
52. <i>P. runcinatum</i> .																		
53. <i>P. sinuatum</i> .																		
54. <i>P. capitatum</i> .																		
55. <i>P. chinense</i> .																		
var. <i>scabra</i> .																		

Sect. VII.
Persicaria.

Sect. VIII.
Cephalanthus
lon.

Sect. VII.
Persicaria.Sect. VIII.
Cephalanthus
lon.

Indian Sub-sub-areas.

	Indian Sub-sub-areas.												
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI		
	N.-W. Frontier	Central Provinces	Penins India.	Upper Gangetic Plain.	Bengal	N.-W. Himalaya	Nepal.	East Himalaya	Assam	Burma.	Malay Penin.	China.	Australasia.
<i>var. ovalifolia</i> .													
<i>var. subhastata</i> .													
<i>var. brachiata</i> .													
<i>var. corymbosa</i> .													
56. <i>P. Gilesii</i> .													
57. <i>P. muricatum</i> .													
58. <i>P. arifolium</i> .													
59. <i>P. perfoliatum</i> .													
60. <i>P. sagittatum</i> .													
61. <i>P. strigosum</i> .													
62. <i>P. prætermisum</i> .													
63. <i>P. birmanicum</i> .													
64. <i>P. pedunculare</i> .													
<i>var. angustissima</i>													
<i>var. nilagirica</i> .													
<i>var. assamica</i> .													
<i>var. glabrata</i> .													
65. <i>P. alpinum</i> .													
66. <i>P. paniculatum</i> .													
67. <i>P. rude</i> .													
68. <i>P. molle</i> .													
69. <i>P. frondosum</i> .													
70. <i>P. polystachyum</i> .													
71. <i>P. ...</i> .													
72. <i>P. campanulatum</i>													
<i>var. fulvida</i> .													
73. <i>P. tortuosum</i> .													
74. <i>P. sibiricum</i> .													
75. <i>P. Hookeri</i> .													
76. <i>P. nummularifo-</i> <i>lium.</i>													
77. <i>P. Convolvulus</i> .													
78. <i>P. dametorum</i> .													
79. <i>P. ...</i> .													

Sec. VIII.
Cephalophi-
lon.

Sec. IX.
Echinocan-
lon.

Sec. X.
Aconitum.

Sec. XI.
Thalictrum.

Sec. VIII.
Cephalophi-
*lon.*Sec. IX.
Echinocys-
*lon.*Sec. X.
*Aconitum.*Sec. XI.
Tiara.

EXTRA-INDIAN LATITUDINAL DISTRIBUTION.

26 Endemic species.

Species distributed westwards.

To Western Asia only	5	{ (8) <i>Polygonum salicornioides</i> <i>Faub. & Spach.</i> (11) <i>Polygonum setosum</i> <i>Faub. & Spach.</i> (12) <i>Polygonum tubulosum</i> <i>Boiss.</i> (13) <i>Polygonum polycnemoides</i> <i>Faub. & Spach.</i> (14) <i>Polygonum afghanicum</i> <i>Meisn.</i>
To Northern Asia only	1	(22) <i>Polygonum sphaerostachyum</i> <i>Meisn.</i>
To Northern and Western Asia only	3	{ (6) <i>Polygonum cognatum</i> <i>Meisn.</i> (7) <i>Polygonum paronychioides</i> <i>C. A. Mey.</i> (15) <i>Polygonum molliaeforme</i> <i>Boiss.</i>
To Western Asia and Europe	1	(42) <i>Polygonum mite</i> <i>Schrank.</i>
To Northern Asia, Europe, North America	1	(1) <i>Polygonum islandicum</i> <i>Hook. f.</i>
To Northern and Western Asia, Europe, Africa	2	{ (10) <i>Polygonum Bellardi</i> <i>All.</i> (77) <i>Polygonum Convolvulus</i> <i>Linn.</i>
To Africa only	1	(19) <i>Polygonum limbatum</i> <i>Meisn.</i>

14 Total of species distributed westwards.

Species distributed eastwards.

To China only	7	{ (24) <i>Polygonum paleaceum</i> <i>Wall.</i> (26) <i>Polygonum amplexicaule</i> <i>Lon.</i> (37) <i>Polygonum viscosum</i> <i>Don.</i> (49) <i>Polygonum microcephalum</i> <i>Don.</i> (51) <i>Polygonum sphaerocephalum</i> <i>Wall.</i> (54) <i>Polygonum capitatum</i> <i>Ham.</i> (57) <i>Polygonum muricatum</i> <i>Meisn.</i>
To Malay Archipelago only	1	(66) <i>Polygonum paniculatum</i> <i>Bl.</i>
To China and Malay Archipelago	5	{ (38) <i>Polygonum stagninum</i> <i>Ham.</i> (41) <i>Polygonum Posumbu</i> <i>Ham.</i> (52) <i>Polygonum runcinatum</i> <i>Ham.</i> (53) <i>Polygonum chinense</i> <i>Linn.</i> (59) <i>Polygonum perfoliatum</i> <i>Linn.</i>
To China and Australia	1	(62) <i>Polygonum prætermisum</i> <i>Hook. f.</i>
To China, Malay Archipelago and Australia	3	{ (17) <i>Polygonum orientale</i> <i>Linn.</i> (61) <i>Polygonum strigosum</i> <i>R. Br.</i> (64) <i>Polygonum pedunculare</i> <i>Wall.</i>
To China and Northern Asia	1	(74) <i>Polygonum sibiricum</i> <i>Less.</i>

18 Total of species distributed eastwards.

Species distributed eastwards and westwards.

To Malay Archipelago, China, Western Asia	1	(44) <i>Polygonum flaccidum</i> <i>Meisn.</i>
---	---	---

To Malay Archipelago and Africa	1	(18) <i>Polygonum tomentosum Willd.</i>
To Malay Archipelago, China, and Africa	1	(48) <i>Polygonum alatum Ham.</i>
To Malay Archipelago, China, Africa, and Australasia	3 {	(16) <i>Polygonum plebejum R. Br.</i> (32) <i>Polygonum lanigerum R. Br.</i> (39) <i>Polygonum barbatum Linn.</i>
To China, North and Western Asia, Europe	1	(25) <i>Polygonum Bistorta Linn.</i>
To Australasia, Malay Archipelago, China, Northern Asia, Europe	1	(35) <i>Polygonum minus Huds.</i>
To China, North and Western Asia, Europe, Africa	1	(34) <i>Polygonum Persicaria Linn.</i>
To Malay Archipelago, China, Western Asia, Europe, Africa	1	(40) <i>Polygonum serrulatum Lagasc.</i>
To China, North Asia, Europe, North America	3 {	(21) <i>Polygonum viviparum Linn.</i> (65) <i>Polygonum alpinum All.</i> (78) <i>Polygonum dumetorum Linn.</i>
To China, North Asia, Europe, Africa, North America	2 {	(9) <i>Polygonum aviculare Linn.</i> (31) <i>Polygonum amphibium Linn.</i>
To Australasia, China, Africa, North and South America	1	(30) <i>Polygonum glabrum Willd.</i>
China, Northern Asia, North America	1	(60) <i>Polygonum sagittatum Linn.</i>
China and North America	2 {	(20) <i>Polygonum virginianum Linn.</i> (58) <i>Polygonum arifolium Linn.</i>
Cosmopolitan	2 {	(33) <i>Polygonum lapathifolium Linn.</i> (43) <i>Polygonum Hydropiper Linn.</i>

21 Total of Eastward and Westward species.

79 Total of Indian species.

All the species which are distributed to North America are confined to the east of the Rocky Mountains of that Continent, at first sight a curious fact, but one that is quite in accordance with the result established by Asa Gray, that the flora of North-East Asia has more affinities with that of North-East than that of North-West America.

Distribution of the Endemic Species.

[illegible]

It will be noticed that the endemic area is almost entirely restricted to the Himalayan range, four species going beyond it eastwards and three westwards.

The following tables give detailed lists of the Polygonums found in each sub-sub-area. By "species distributed to other sub-sub-areas" is meant species which are endemic to India as a whole, though not to the particular sub-sub-area in which they occur. By "species with an extra Indian distribution" is meant non-endemic Indian species which are found in the sub-sub-area considered.

I.—NORTH-WEST FRONTIER.

Section III.—*Avicularia*.

Species endemic to the sub-sub-area : (4) *Polygonum biaristatum* Aitch. & Hemsley.

Section X.—*Aconogon*.

Species distributed to other sub-sub-areas : (71) *Polygonum rumicifolium* Royle.

Section III.—*Avicularia*.

- (6) *Polygonum cognatum* Meisn.
- (7) *Polygonum paronychioides* C. A. Mey.
- (8) *Polygonum salicornioides* Faub. & Spach.
- (9) *Polygonum aviculare* Linn.
- (10) *Polygonum Bellardi* All.
- (11) *Polygonum setosum* Faub. & Spach.
- (12) *Polygonum tubulosum* Boiss.
- (13) *Polygonum polycnemoides* Faub. & Spach.
- (14) *Polygonum afghanicum* Meisn.
- (15) *Polygonum plebejum* R. Br.

Section VI.—*Bistoria*.

- (26) *Polygonum amplexicaule* Don.

Section VII.—*Persicaria*.

- (30) *Polygonum glabrum* Willd.
- (32) *Polygonum lanigerum* R. Br.
- (33) *Polygonum lapathifolium* Linn.
- (34) *Polygonum Persicaria* Linn.
- (39) *Polygonum barbatum* Linn.
- (40) *Polygonum serrulatum* Lagasc.
- (43) *Polygonum Hydropiper* Linn.
- (44) *Polygonum flaccidum* Meisn.

Section VIII.—*Cephalophilon*.

- (47) *Polygonum glaciale* Hook. f.
- (48) *Polygonum alatum* Ham.

Section XI.—*Tiniaria*.

- (77) *Polygonum Convolvulus* Linn.
- (78) *Polygonum dumetorum* Linn.

Species with an extra-Indian distribution : 28

Total of North-West Frontier species : 25, or 31·6 per cent.

This sub-sub-area, so far as the genus *Polygonum* is concerned, is an extra-Indian extension of Boissier's oriental province. All except four of the species belong to either *Persicaria* or *Avicularia*. The species of the former section have a wide Indian and extra-Indian distribution both eastwards and westwards. The *Avicularia* section, however, is especially characteristic of this sub-sub-area, in which and in the drier districts of the North-West Himalaya the Indian contingent of Boissier's oriental *Polygonums* reach their easternmost limit, with the exception of the polymorphous *Polygonum plebejum*, and *Polygonum aviculare*; the former is found all over India, China and Australia, the latter reaches China.

II.—CENTRAL PROVINCES.

Species endemic to the sub-sub-area	No species.
Species distributed to other sub-sub-areas	No species.
	Section III.— <i>Avicularia</i> .
	(16) <i>Polygonum plebejum</i> R. Br.
	Section IV.— <i>Amblygonon</i> .
Species with an extra-Indian distribution	5 { (18) <i>Polygonum tomentosum</i> Willd. (19) <i>Polygonum limbatum</i> Meisn.
	Section VII.— <i>Persicaria</i> . ¹
	(30) <i>Polygonum glabrum</i> Willd. (39) <i>Polygonum barbatum</i> Linn.

Total of Central Provinces species : 5, or 6·33 per cent.

The true percentage is probably considerably higher than 6·33, but the Central Provinces are very poorly represented, so far as the genus under consideration is concerned, in the Calcutta Herbarium.

III.—PENINSULAR INDIA.

Species endemic to the sub-sub-area	No species.
Species distributed too ther sub-sub-areas	No species.
	Section III.— <i>Avicularia</i> .
Species with an extra-Indian disti- bution	14 { (16) <i>Polygonum plebejum</i> R. Br.
	Section IV.— <i>Amblygonon</i> .
	(18) <i>Polygonum tomentosum</i> Willd. (19) <i>Polygonum limbatum</i> Meisn.

A CENSUS OF THE INDIAN POLYGONUMS.

Species with an extra-Indian distribution	14	<i>Section VII.—Persicaria.</i>
		(30) <i>Polygonum glabrum Willd.</i> (35) <i>Polygonum minus Huds.</i> (39) <i>Polygonum barbatum Linn.</i> (40) <i>Polygonum serrulatum Lagasc.</i> (43) <i>Polygonum Hydropiper Linn.</i> (44) <i>Polygonum flaccidum Meisn.</i>
		<i>Section VIII.—Cephalophilon.</i>
		(48) <i>Polygonum alatum Ham.</i> (51) <i>Polygonum runcinatum Ham.</i> (55) <i>Polygonum chinense Linn.</i> <i>var. ovalifolia.</i>
		<i>Section IX.—Echinocaulon.</i>
		(61) <i>Polygonum strigosum R. Br.</i> (64) <i>Polygonum pedunculare Wall.</i>

Total of Peninsular India species : 14, or 17·7 per cent.

IV.—UPPER GANGETIC PLAIN.

Species endemic to the sub-sub-area	No species.
Species distributed to other sub-sub-areas	No species.
Species with an extra Indian distribution	<i>Section III.—Avicularia.</i>
	(16) <i>Polygonum plebejum R. Br.</i>
	<i>Section IV.—Amblygonon.</i>
	(17) <i>Polygonum orientale Linn.</i>
	(19) <i>Polygonum limbatum Meisn.</i>
	<i>Section VII.—Persicaria.</i>
	(30) <i>Polygonum glabrum Willd.</i>
	(32) <i>Polygonum lanigerum R. Br.</i>
	(39) <i>Polygonum barbatum Linn.</i>
	(40) <i>Polygonum serrulatum Lagasc.</i>
(41) <i>Polygonum Posumbu Ham.</i>	
(44) <i>Polygonum flaccidum Meisn.</i>	
	<i>Section VIII.—Cephalophilon.</i>
	(48) <i>Polygonum alatum Ham.</i>

Total number of Gangetic plain species : 10, or 12·7 per cent.

V.—BENGAL.

Species endemic to the sub-sub-area	No species.	
Species distributed to other sub-sub-areas	No species.	
Species with an extra-Indian distribution	19 {	Section III.— <i>Avicularia</i> .
		(16) <i>Polygonum plebejum R. Br.</i>
		Section IV.— <i>Amblygonon</i> .
		(17) <i>Polygonum orientale Linn.</i>
		(18) <i>Polygonum tomentosum Willd.</i>
		(19) <i>Polygonum limbatum Meisn.</i>

Section VII.—*Persicaria*.

- (30) *Polygonum glabrum* Willd.
 (32) *Polygonum lanigerum* R. Br.
 (33) *Polygonum lapathifolium* Linn.
 (35) *Polygonum minus* Huds.
 (38) *Polygonum stagninum* Ham.
 (39) *Polygonum barbatum* Linn.
 (40) *Polygonum serrulatum* Lagasc.
 (43) *Polygonum Hydropiper* Linn.
 (44) *Polygonum flaccidum* Meisn.

Species with an extra-Indian distribution

19

Section VIII.—*Cephalophylon*.

- (48) *Polygonum alatum* Ham.
 (54) *Polygonum capitatum* Ham.
 (55) *Polygonum chinense* Linn.
 var. ovalifolia.

Section IX.—*Echinocaulon*.

- (59) *Polygonum perfoliatum* Linn.
 (61) *Polygonum strigosum* R. Br.
 (64) *Polygonum pedunculare* Wall.

Total number of Bengal species : 19, or 24 per cent.

VI.—NORTH-WEST HIMALAYA.

Section III.—*Avicularia*.

- (5) *Polygonum recumbens* Royle.

Species endemic to the sub-sub-area

4

Section VIII.—*Cephalophylon*.

- (46) *Polygonum humile* Meisn.
 (56) *Polygonum Gilesii* Hemsl.

Section X.—*Aconogon*.

- (69) *Polygonum frondosum* Meisn.

Section II.—*Eleutherosperma*.

- (2) *Polygonum delicatulum* Meisn.
 (3) *Polygonum filicaule* Wall.

Section VI.—*Bistorta*.

- (23) *Polygonum perpusillum* Hook. f.
 (27) *Polygonum affine* Don.
 (28) *Polygonum vacciniifolium* Wall.
 (29) *Polygonum Emodi* Meisn.

Species distributed to other sub-sub-areas

16

Section VIII.—*Cephalophylon*.

- (47) *Polygonum glaciale* Hook. f.
 (31) *Polygonum sphærocephalum* Wall.
 (33) *Polygonum sinuatum* Royle.

Species distributed to other sub-sub-
areas—contd. 16

Section X.—Aconogon.

- (69) *Polygonum molle* Don.
- (70) *Polygonum polystachyum* Wall.
- (71) *Polygonum rumicifolium* Roy's.
- (72) *Polygonum campanulatum* Hook. f.
- (73) *Polygonum tortuosum* Don.
- (76) *Polygonum nummularifolium* Meisn.

Section XI.—Tinaria.

- (79) *Polygonum pterocarpum* Wall.

Section I.—Koenigia.

- (1) *Polygonum islandicum* Hook. f.

Section III.—Avicularia.

- (6) *Polygonum cognatum* Meisn.
- (7) *Polygonum paronychioides* C. A. Mey.
- (9) *Polygonum aviculare* Linn.
- (11) *Polygonum setosum* Faub. & Spach.
- (12) *Polygonum tubulosum* Boiss.
- (13) *Polygonum polycnemoides* Faub. & Spach.
- (15) *Polygonum molliaforme* Boiss.
- (16) *Polygonum plebejum* R. Br.

Section IV.—Amblygonon.

- (17) *Polygonum orientale* Linn.

Section V.—Tovara.

- (20) *Polygonum virginianum* Linn.

Section VI.—Bistorta.

Species with an extra-Indian distri-
bution 39

- (21) *Polygonum viviparum* Linn.
- (22) *Polygonum sphaerostachyum* Meisn.
- (25) *Polygonum Bistorta* Linn.
- (25) *Polygonum amplexicaule* Don.

Section VII.—Persicaria.

- (30) *Polygonum glabrum* Willd.
- (31) *Polygonum amphibium* Linn.
- (32) *Polygonum lanigerum* R. Br.
- (33) *Polygonum lapathifolium* Linn.
- (34) *Polygonum Persicaria* Linn.
- (35) *Polygonum minus* Huds.
- (38) *Polygonum stagninum* Ham.
- (39) *Polygonum barbatum* Linn.
- (40) *Polygonum serrulatum* Lagasc.
- (41) *Polygonum Posumbu* Ham.
- (42) *Polygonum mite* Schrank.
- (43) *Polygonum Hydropiper* Linn.
- (44) *Polygonum flaccidum* Meisn.

Section VIII.—Cephalophylon.

- (48) *Polygonum alatum* Ham.
- (54) *Polygonum capitatum* Ham.
- (55) *Polygonum chinense* Linn.

Section IX.—Echinocaulon.

- (59) *Polygonum perfoliatum* Linn.
- (60) *Polygonum sagittatum* Linn.
- (61) *Polygonum strigosum* R. Br.

Section X.—Aconogon.

Species with an extra-Indian distribution 39

- (65) *Polygonum alpinum* All.
- (66) *Polygonum paniculatum* Bl.
- (74) *Polygonum sibiricum* Laxm.

Section XI.—Tiniaria.

- (77) *Polygonum Convolvulus* Linn.
- (78) *Polygonum dumetorum* Linn.

Total number of North-West Himalaya species: 59, or 74·7 per cent.

This sub-sub-area has much the largest *Polygonum* population, and has the largest number of endemic species. It is the only sub-sub-area which has all eleven sections represented, and from its number of species and sections may be considered as the *Polygonum* head-quarters. The great variety of climates which this sub-sub-area enjoys is no doubt one of the chief causes of this wealth of species. To quote from Hooker and Thomson's essay, this sub-sub-area presents "a very gradual transition from the flora of Nepal to that of the arid Afghan hills. This is the case equally in the tropical, temperate, and alpine zones of vegetation, and in the interior as well as in the exterior Himalaya." We find the species of the section *Avicularia* confined chiefly to the inner drier districts, while other sections are more irregularly distributed over all the districts with a preponderance in the moister. The other sub-sub-areas to which the sixteen species mentioned above are distributed are entirely central or Eastern Himalayan, unless with the exception of the occurrence of that very doubtful variety *Wightiana* of *Polygonum sphærocephalum* in the Nilgiris.

VII.—NEPAL.

Species endemic to the sub-sub-area

No species.

Section II.—Eleutherosperma.

- (3) *Polygonum filicaule* Wall.

Section VI.—Bistorta.

Species distributed to other sub-sub-areas. 9

- (27) *Polygonum affine* Don.
- (28) *Polygonum vacciniifolium* Wall.

Section VIII.—Cephalophilon.

- (50) *Polygonum Wallichii* Meisn.
- (51) *Polygonum sphærocephalum* Wall.

Section X.—Aconogon.

Species distributed to other sub-sub-areas

9

- (66) *Polygonum paniculatum* Bl.
- (68) *Polygonum molle* Don.
- (71) *Polygonum rumicifolium* Royle.
- (72) *Polygonum campanulatum* Hook. f. var. *fulvida*.

Section III.—Avicularia.

- (16) *Polygonum plebejum* R. Br.

Section VI.—Bistorta.

- (22) *Polygonum sphærostachyum* Meisn.
- (25) *Polygonum Bistorta* Linn.
- (26) *Polygonum amplexicaule* Don. var. *speciosa*.

Section VII.—Persicaria.

Species with an extra-Indian distribution

17

- (32) *Polygonum lanigerum* R. Br.
- (35) *Polygonum minus* Huds.
- (37) *Polygonum viscosum* Ham.
- (39) *Polygonum barbatum* Linn.
- (44) *Polygonum flaccidum* Meisn. var. *hispida*.

Section VIII.—Cephalophilon.

- (48) *Polygonum alatum* Ham.
- (49) *Polygonum microcephalum* Don.
- (52) *Polygonum runcinatum* Ham.
- (54) *Polygonum capitatum* Ham.
- (55) *Polygonum chinense* Linn. var. *ovalifolia*.

Section IX.—Echinocaulon.

- (57) *Polygonum muricatum* Meisn.
- (59) *Polygonum perfoliatum* Linn.
- (61) *Polygonum strigosum* R. Br.

Total of Nepal species : 26, or 33 per cent.

VIII.—SIKKIM.

Section X.—Aconogon.

Species endemic to the sub-sub-area

1

- (75) *Polygonum Hookeri* Meisn.

Section II.—Eleutherosperma.

- (2) *Polygonum delicatulum* Meisn.
- (3) *Polygonum filicaule* Wall.

Section VI.—Bistorta.

Species distributed to other sub-sub-areas

12

- (23) *Polygonum perpusillum* Hook f.
- (28) *Polygonum vacciniifolium* Wall.
- (29) *Polygonum Emodi* Meisn.

Section VIII.—Cephalophilon.

- (50) *Polygonum Wallichii* Meisn.
- (53) *Polygonum sinuatum* Royle.

Species distributed to other sub-sub-areas	12	Section X.—Aconogon.	
		(68)	<i>Polygonum molle</i> Don.
		(70)	<i>Polygonum polystachyum</i> Wall.
		(72)	<i>Polygonum campanulatum</i> Hook. f.
		(73)	<i>Polygonum tortuosum</i> Don.
		Section XI.—Tinaria.	
		(79)	<i>Polygonum pterocarpum</i> Wall.
Species with an extra-Indian distribution	26	Section III.—Avicularia.	
		(16)	<i>Polygonum plebejum</i> R. Br.
		Section V.—Tovara.	
		(20)	<i>Polygonum virginianum</i> Linn.
		Section VI.—Bistorta.	
		(21)	<i>Polygonum viviparum</i> Linn.
		(22)	<i>Polygonum sphærostachyum</i> Meisn.
		(26)	<i>Polygonum amplexicaule</i> Don.
		Section VII.—Persicaria.	
		(30)	<i>Polygonum glabrum</i> Willd.
		(31)	<i>Polygonum amphibium</i> Linn.
		(33)	<i>Polygonum lapathifolium</i> Linn.
		(35)	<i>Polygonum minus</i> Huds.
		(39)	<i>Polygonum barbatum</i> Linn.
		(41)	<i>Polygonum Posumbu</i> Ham.
		(43)	<i>Polygonum Hydropiper</i> Linn.
		(44)	<i>Polygonum flaccidum</i> Meisn.
Section VIII.—Cephalophilon.			
(48)		<i>Polygonum alatum</i> Ham.	
(49)		<i>Polygonum microcephalum</i> Don.	
(52)		<i>Polygonum runcinatum</i> Ham.	
(54)		<i>Polygonum capitatum</i> Ham.	
(55)		<i>Polygonum chinense</i> Linn.	
Section IX.—Echinocaulon.			
(57)		<i>Polygonum muricatum</i> Meisn.	
(58)		<i>Polygonum arifolium</i> Linn.	
(59)		<i>Polygonum perfoliatum</i> Linn.	
(61)		<i>Polygonum strigosum</i> R. Br.	
(62)		<i>Polygonum prætermisum</i> Hook. f.	
Section X.—Aconogon.			
(66)		<i>Polygonum paniculatum</i> Bl.	
(74)		<i>Polygonum sibiricum</i> Laxm.	
Section XI.—Linaria.			
(77)		<i>Polygonum Convolvulus</i> Linn.	

Total number of Sikkim species: 39, or 50 per cent.

A CENSUS OF THE INDIAN POLYGONUMS.

IX. — ASSAM.

Species endemic to the sub-sub-area.	2	Section VII.— <i>Persicaria</i> .	(36) <i>Polygonum assamicum</i> Meisn. (45) <i>Polygonum macranthum</i> Meisn.
Species distributed to other sub-sub-areas	1	Section X.— <i>Aconogon</i> .	(67) <i>Polygonum rude</i> Meisn.
		Section III.— <i>Avicularia</i> .	(16) <i>Polygonum plebejum</i> R. Br.
		Section IV.— <i>Amblygonon</i> .	(17) <i>Polygonum orientale</i> Linn. (18) <i>Polygonum tomentosum</i> Willd.
		Section V.— <i>Tovara</i> .	(20) <i>Polygonum virginianum</i> Linn.
		Section VI.— <i>Bistorta</i> .	(24) <i>Polygonum paleaceum</i> Wall.
		Section VII.— <i>Persicaria</i> .	(30) <i>Polygonum glabrum</i> Willd. (32) <i>Polygonum lanigerum</i> R. Br. (33) <i>Polygonum lapathifolium</i> Linn. (35) <i>Polygonum minus</i> Huds. (37) <i>Polygonum viscosum</i> Ham. (38) <i>Polygonum staenium</i> Ham. (39) <i>Polygonum barbatum</i> Linn. (40) <i>Polygonum serrulatum</i> Lagasc. (41) <i>Polygonum Posumbu</i> Ham. (43) <i>Polygonum Hydropiper</i> Linn. (44) <i>Polygonum flaccidum</i> Meisn.
Species with an extra-Indian distribution	29	Section VIII.— <i>Cephalophilon</i> .	(48) <i>Polygonum alatum</i> Ham. (49) <i>Polygonum microcephalum</i> Don. (52) <i>Polygonum runcinatum</i> Ham. (54) <i>Polygonum capitatum</i> Ham. (55) <i>Polygonum chinense</i> Linn.
		Section IX.— <i>Echinocaulon</i> .	(57) <i>Polygonum muricatum</i> Meisn. (58) <i>Polygonum arifolium</i> Linn. (59) <i>Polygonum perfoliatum</i> Linn. (60) <i>Polygonum sagittatum</i> Linn. (61) <i>Polygonum strigosum</i> R. Br. (62) <i>Polygonum prætermisum</i> Hook. f. (64) <i>Polygonum pedunculare</i> Wall.
		Section X.— <i>Aconogon</i> .	(66) <i>Polygonum paniculatum</i> Bl.

Total number of Assam species : 32, or 40·5 per cent.

X.—BURMA.

Section.—IX Echinocaulon.

Species endemic to the sub-sub-area

1 (63) *Polygonum birmanicum* Gage.*Section X.—Aconogon.*

Species distributed to other sub-sub-areas

1 (67) *Polygonum rude* Meisn.*Section III.—Avicularia.*(16) *Polygonum plebejum* R. Br.*Section IV.—Amblygonon.*

- (17) *Polygonum orientale* Linn.
 (18) *Polygonum tomentosum* Willd.
 (19) *Polygonum limbatum* Meisn.

Section V.—Tonara.(20) *Polygonum virginianum* Linn.*Section VI.—Bistorta.*(24) *Polygonum paleaceum* Wall.

Species with an extra-Indian distribution

20

Section VII.—Persicaria.

- (30) *Polygonum glabrum* Willd.
 (32) *Polygonum lanigerum* R. Br.
 (33) *Polygonum lapathifolium* Linn.
 (35) *Polygonum minus* Huds.
 (37) *Polygonum viscosum* Ham.
 (38) *Polygonum stagninum* Ham.
 (39) *Polygonum barbatum* Linn.
 (40) *Polygonum serrulatum* Lagasc.
 (43) *Polygonum Hydropiper* Linn.
 (44) *Polygonum flaccidum* Meisn.

Section VIII.—Cephalophilon.

- (48) *Polygonum alatum* Ham.
 (55) *Polygonum chinense* Linn.

Section IX.—Echinocaulon.

- (59) *Polygonum perfoliatum* Linn.
 (61) *Polygonum strigosum* R. Br.

Total of Burmese species: 22, or 27·8 per cent.

XI.—MALAY PENINSULA and ANDAMANS.

Species endemic to the sub-sub-area

No species.

Species distributed to other sub-sub-areas ,

No species.

Section III.—*Avicularia*.(16) *Polygonum plebejum* R. Br.Section IV.—*Amblygonon*.(18) *Polygonum tomentosum* Willd.Section VII.—*Persicaria*.(35) *Polygonum minus* Huds.(38) *Polygonum stagninum* Ham.(39) *Polygonum barbatum* Linn.(40) *Polygonum serrulatum* Lagasc.(43) *Polygonum Hydropiper* Linn.(44) *Polygonum flaccidum* Meisn.Section VIII.—*Cephalophalon*.(55) *Polygonum chinense* Linn.Section IX.—*Echinocaulon*.(61) *Polygonum strigosum* R. Br.(64) *Polygonum pedunculare* Wall.

Species with an extra-Indian distribution

11

Total of Malay Peninsula species : 11, or 14 per cent.

The following table shows the 'sectional' distribution of the genus in the various sub-sub-areas. The figure in any given square is the number of species belonging to the section indicated horizontally and found in the sub-sub-area indicated vertically.

Sectional Distribution of the Genus in India.

		I. North- West. Frontier.	II. Central Prov- inces.	III. Penins. India.	IV. Upper Gangetic Plain.	V. Bengal.	VI. North- West. Hima- laya.	VII. Nepal.	VIII. East Hima- laya.	IX. Assam.	X. Burma.	XI. Malay Penins	Total number of Indian species in each section.
Section I	<i>Koenigia</i> Hook. f.	...	...	...	...	...	1	...	...	...	...	...	1
Section II	<i>Eleutherosperma</i> Hook. f.	...	...	...	...	...	2	1	2	...	...	...	2
Section III	<i>Avicularia</i> Meisn.	11	1	1	1	1	9	1	1	1	1	1	13
Section IV	<i>Amblygonon</i> Meisn.	...	2	2	2	3	1	...	...	2	3	1	3
Section V	<i>Touara</i> A. Gray	...	...	...	...	...	1	...	1	1	1	...	1
Section VI	<i>Bistorta</i> Toura.	1	...	...	...	...	8	5	6	1	1	...	9
Section VII	<i>Persicaria</i> Meisn.	8	2	6	6	9	13	5	8	13	10	6	16
Section VIII	<i>Cephalophylon</i> Meisn.	2	...	3	1	3	8	7	7	5	2	1	11
Section IX	<i>Echinocaulon</i> Meisn.	...	...	2	...	3	3	3	5	7	3	2	8
Section X	<i>Aconogen</i> Meisn.	1	...	...	...	...	10	4	7	2	1	...	12
Section XI	<i>Tiniaria</i> Meisn.	2	...	...	...	...	3	...	2	...	...	...	3
	TOTAL	25	5	14	10	19	59	26	39	32	22	11	79

In the foregoing table it will be noticed that *Koenigia* has the smallest number of species and is least widely distributed in India, while *Persicaria* has the greatest number of species and is most widely distributed. *Avicularia* is especially distinctive to the North-West Frontier and the North-West Himalaya. *Bistorta*, *Cephalophylon*, *Aconogon*, and *Tiniaria* are characteristic of the Himalayan range from west to east. *Amblygonon* is practically restricted to the sub-sub-areas of low altitude. *Echinocaulon* is strongly represented in Assam.

ALTITUDINAL DISTRIBUTION IN INDIA.

The following diagram gives the altitudinal range of every species with the more important varieties occurring in India. Each of the squares represents one thousand feet vertically as indicated on the left margin. Any further facts regarding the altitudinal range of any species can easily be incorporated by the reader simply 'inking in' the appropriate squares. The diagram is not of course likely to be absolutely correct for every species, but the range of error probably does not go much beyond five hundred feet either way.

The species with the greatest vertical range is (21) *Polygonum viviparum* Linn., which is found from 5,000 feet up to 18,000 feet. Several species have a very restricted range. Of these among the more alpine forms are (15) *Polygonum molliaforme* Boiss., (23) *Polygonum perpusillum* Hook. f., (25) *Polygonum Bistorta* Linn., (75) *Polygonum Hookeri* Meisn., and (76) *Polygonum nummularifolium* Meisn. Amongst the low-level species (18) *Polygonum tomentosum* Willd., (19) *Polygonum limbatum* Meisn., and (64) *Polygonum pedunculare* Wall., may be singled out.

The study of the altitudinal range of some of the varieties of *Polygonum plebejum* R. Br. lends some additional support to the writer's opinion, based on morphological grounds, that some of those varieties might well be raised to specific rank. It is seen that *Polygonum plebejum* and its variety *elegans* have the same vertical range, while the varieties *indica* and *brevifolia* are also altitudinal twins. On the other hand the variety *Griffithii* has a distinctly restricted range; *Polygonum tomentosum* and *Polygonum limbatum*, which are so remarkably like each other morphologically, are also linked by their latitudinal and altitudinal distribution.

The diagram of general altitudinal distribution is followed by a similar one for the sections. The pages containing the former are to be held sideways.

Altitudinal distribution of species in India.

	0	1,000.	2,000.	3,000.	4,000.	5,000.	6,000.	7,000.	8,000.	9,000.	10,000.	11,000.	12,000.	13,000.	14,000.	15,000.	16,000.	17,000.	18,000.	19,000.	20,000.
1. <i>P. islandicum</i> .																					
2. <i>P. delicatulum</i> .																					
3. <i>P. filcaule</i> .																					
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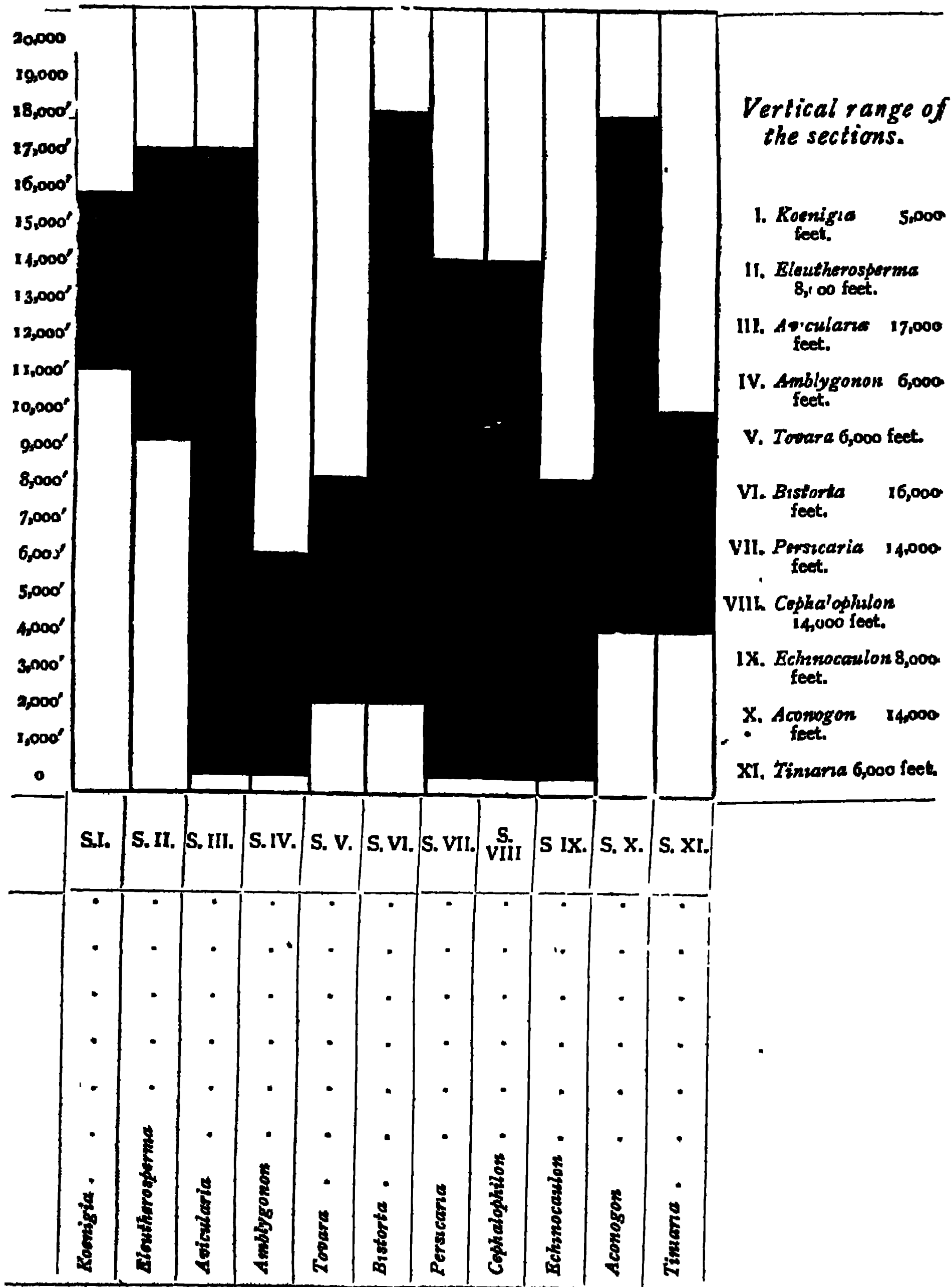
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